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Prepared by
Nancy McLane

October 1980

Energy Division and Facility Siting Division

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

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Helena, Montana 59620
(406) 449-3780

PREFACE

The *1980 Montana Energy Almanac* is an energy reference source for the Montana public, the Legislature, and all other persons interested in obtaining information concerning Montana's energy legislation, policies and programs. The *Almanac* also contains summaries of Montana energy production, consumption and supply data, prospective energy development plans, and pertinent regional, federal and private-sector energy-related activities of concern to the state. The information has primarily been summarized from the programs, staff activities and data files of the Department of Natural Resources and Conservation, excepting the descriptions of energy-related programs and activities in other executive departments of state government, local government, and private sector organizations; each agency or private organization reviewed the material describing it in the text. Most of the material was submitted before October 1980.

ACKNOWLEDGMENTS

The first *Montana Energy Almanac* (1978) was prepared by Gail Kuntz. Without that excellent model, the task of preparing the 1980 Almanac would have been far more difficult. This *Almanac* incorporates much of the original material from the 1978 edition.

This *Almanac* could not have been produced without the help of the many individuals in other agencies, both public and private, who took the time to provide information on their energy-related programs. In DNRC, special thanks go to Lee Walsh, Ed Madej, Pat Nichols, Lynda Steele, and Tandy Ford who did more than their share of research and writing. A draft of this *Almanac* was carefully and helpfully reviewed by Gail Kuntz, Bob Anderson, Jan Konigsberg, and William Gosnell.

Karen Renne undertook the enormous task of editing the *Almanac*, often a challenging job due to the diverse writing styles of the over 75 contributors. Lois Delger spent untold hours typing the manuscript; the typesetting was done by Patti McCarthy, proofreading by William Phippen, and the pasteup and layout by Gary Wolf.

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1

INTRODUCTION

The policies, legislation and programs summarized in this document are Montana's response to one of the most significant public concerns of the 1980's — the need to supply its people's energy requirements while preserving Montana's quality of life and planning for a more secure energy future. These two imperatives have stimulated considerable activity in both the public and private sector. Not only government activities, but also industrial and commercial activities have grown and expanded. The 1980 *Montana Energy Almanac* updates the 1978 *Almanac* and describes the new energy-related activities of the last two years.

Montana faces many of the same energy problems that confront the rest of the nation, including rising prices and uncertainty of supply, and major regional and national demands for its fossil fuel reserves as well. Extracting,converting and transporting these energy resources affects the people and the land in numerous ways, many of which are undesirable. Generally, the greater the rate of utilization of these resources, the greater the impacts.

During the past two years exploratory drilling for oil has increased substantially, as has coal production. Long-range plans submitted by utility and energy companies to the Department of Natural Resources and Conservation project the eventual construction of additional new hydroelectric facilities, coal-fired power plants, transmission lines, and coal gasification plants to serve markets in and outside Montana. Review of these projects by federal and state agencies is required by law.

During the last eight years Montana has enacted laws to ensure that all energy developments receive full public review and detailed study before approval is granted. Montanans are willing to share their energy resources, but the regions that require additional energy must be willing to share the energy conversion impacts and to pay for their use of the state's resources.

The energy situation now is unsettled and ambiguous. Energy policy is subject to constant reassessment. No single explanation of the energy problem stands out as clearly acceptable, and energy needs are only one consideration in developing energy policy and programs. Preserving their environment and way of life, and at the same time increasing the number of jobs, are additional factors that Montanans weigh when they look at their energy future. But in spite of the multitude of issues, one assessment remains clear: supplies of fossil fuel and large-scale hydroelectric generation eventually will not be sufficient to meet the demand for energy, nor can all the impacts of extracting and converting fossil fuels be mitigated or compensated. Conservation and renewable energy sources offer an alternative to traditional fossil fuel energy sources. Government and citizens have taken the initiative in developing these sustainable energy strategies, and industry is now actively pursuing opportunities to conserve energy.

Many Montanans agree that a transition to renewable energy is desirable, though there is less agreement on the speed at which that transition should proceed and the direction it should take. Montana is far better suited than most areas to rely heavily on renewable energy. Montanans can tap a range of sustainable resources—direct solar, biomass, wind, water and geothermal. The small, dispersed population is ideally sized for renewable energy applications. In areas of growing population, energy-efficient capital stock can be phased in with less disruption than would be the case in areas of stable population.

In addition to having ample renewable energy resources, Montana has already indicated its ability to adopt sustainable energy techniques. The 1975 Legislature passed Senate Bill 86, which established the Alternative Renewable Energy Sources Program, allocating a portion of the revenue from the coal severance tax to grants for the demonstration and commercialization of renewable energy technology. Citizen groups interested in renewable energy are active across the state. Numerous businesses manufacturing everything from insulation to wood stoves to flat-plate collectors now operate in the state. Conservation and renewable energy opportunities are central features of a number of programs described in this report.

The following four sections of this report describe Montana's present energy production and consumption, prospective energy development plans, legislation enacted to establish the framework of an energy policy, and the programs implementing that legislation. Certain prospective or recently enacted federal energy statutes that would affect state energy activities are summarized as well.

The national emphasis on seeking solutions to energy-related problems is reflected by the presence of a large number of regional and federal energy projects and planning efforts in Montana and other western states. Sections 6 and 7 summarize the activities of regional and federal organizations and projects that have an important impact on Montana. At the regional level these include organizations such as the Western Governor's Policy Office, the Western Solar Utilization Network, and cooperative efforts of the Pacific Northwest states to address regional energy planning problems. The U.S. Department of Energy is responsible for a majority of federal energy-related programs; in addition, the Department of the Interior, the U.S. Army Corps of Engineers and the U.S. Forest Service significantly influence energy-related activities in Montana due to the extensive federally-managed acreage and hydroelectric facilities in the state.

Section 8 summarizes initial efforts of local government in energy planning-related areas. There is a great potential for effective energy planning at the local level, particularly for conserving energy and developing renewable, decentralized sources.

Section 9 discusses energy-related organizations of various kinds,including the Montana Energy and MHD Research and Development Institute (MERDI), National Center for Appropriate Technology (NCAT), citizen groups, utilities and Indian tribes. MERDI and NCAT are conducting major national research studies to develop more efficient or renewable energy technologies as well as numerous energy projects specifically related to Montana. Citizen organizations are contributing to energy planning and decision-making processes. Montana's utilities are expanding their energy planning activities to include a number of innovative programs involving conservation, renewable and alternative energy sources, and cooperative projects with state and private groups. Montana's Indian tribes also exercise an important influence on energy activities in the state.

Section 10 presents a status summary of Montana energy issues, with emphasis on the events of the past two years.

MONTANA ENERGY PRODUCTION, CONSUMPTION AND SUPPLY

Much of Montana is underlain with large fossil fuel reserves, giving the state a historic and continuing role as a major energy producer and exporter. More than one quarter of the U.S. coal reserve base is located in Montana, including 103 billion tons of subbituminous coal, or 61 percent of the U.S. subbituminous coal reserve base.

While coal probably accounts for most of the state's known fossil fuel reserves, Montana also has important crude oil and natural gas deposits. The American Gas Association estimates the state has 140 million barrels of proved crude oil reserves and 992 billion cubic feet of proved natural gas reserves. Figure II-A shows the location of Montana's fossil fuel reserves and the associated pipelines and refineries that serve Montana.

Montana's rivers are also an important energy resource, providing 2,214 megawatts, or 67 percent of the state's presently installed electric generating capacity; however, thermal electric generating plants continue to grow in importance. Twenty years ago less than 5 percent of Montana's electricity was generated by coal-fired power plants; today, over 30 percent is coal generated. Figure II-A shows the location of Montana's power plants and transmission lines.

Montana's total energy production in 1979 was 824 trillion Btu. The 100 trillion Btu increase over 1978 is largely due to a 22 percent increase in coal production. Montana produces more than twice as much energy as it consumes; however, on a per capita basis, Montanans consume one-third more energy than other U.S. citizens. This is primarily due to the state's small, geographically dispersed population and its relatively high industrial (including agricultural) energy consumption. Table II-1 displays trends in production and consumption of energy in Montana.

Industry, including agriculture, consumes more energy than any other sector, accounting in 1978 for 37 percent of the energy consumed in Montana. Figure II-C shows the state's consumption by end-use sector.

Montana's historical energy production and consumption by fuel type are illustrated in Figures II-B and II-D, respectively. Montana consumes more petroleum products than any other type of energy, with motor gasoline for private and commercial transportation constituting the largest share of the demand.

Montana's energy import-export situation is based on a number of factors including intra- and interstate market influences, energy transportation facilities (particularly oil pipelines), resource ownership, and management patterns. The relative balance of energy production, consumption, imports and exports, excluding electrical energy, is shown in Figure II-E.

TABLE II-1
PRODUCTION AND CONSUMPTION OF ENERGY IN MONTANA

PHYSICAL UNITS

	Production				Consumption			
Energy Source	**1976**	**1977**	**1978**	**1979**	**1976**	**1977**	**1978**	**1979**
Coal (million tons)	26.2	27.4	26.7	32.4	2.5	3.4	3.4	N/A
Dry Natural Gas (billion cubic feet)	45.1	48.2	47.1	53.9	74.4	71.0	72.6	N/A
Petroleum (million barrels)	32.8	32.7	30.5	30.0	29.9	28.9	31.6	N/A
Hydroelectric Power[1] (billion kWh)	12.4	8.5	11.7	10.3	8.0	7.8	8.7	8.9
Wood and Waste[2] (million kWh)	32.0	46.0	52.0	52.0	37.0	46.0	52.0	N/A

TRILLION Btu's

	Production				Consumption			
Energy Source	**1976**	**1977**	**1978**	**1979**	**1976**	**1977**	**1978**	**1979**
Coal	457.6	478.0	465.6	566.6	42.8	59.1	59.2	N/A
Dry Natural Gas	45.1	48.2	47.1	53.9	75.8	72.3	73.8	N/A
Petroleum	184.1	183.3	170.9	168.0	164.7	159.9	174.4	N/A
Hydroelectric Power[1]	42.3	28.9	39.9	35.3	27.2	26.7	29.7	30.4
Wood and Waste[2]	0.1	0.2	0.2	0.2	0.1	0.2	0.2	N/A
TOTAL	729.3	738.6	723.8	824.0	310.6	318.2	337.3	N/A

[1]Montana's hydroelectric power consumption was estimated based on sales of electricity to ultimate consumers in Montana and fossil fuel-fired generation. The estimation procedure is discussed in the source document.
[2]Used to produce electricity.
SOURCE: DNRC Energy Division, *Historical Energy Statistics*, 4th ed., 1980

FIGIONTANA

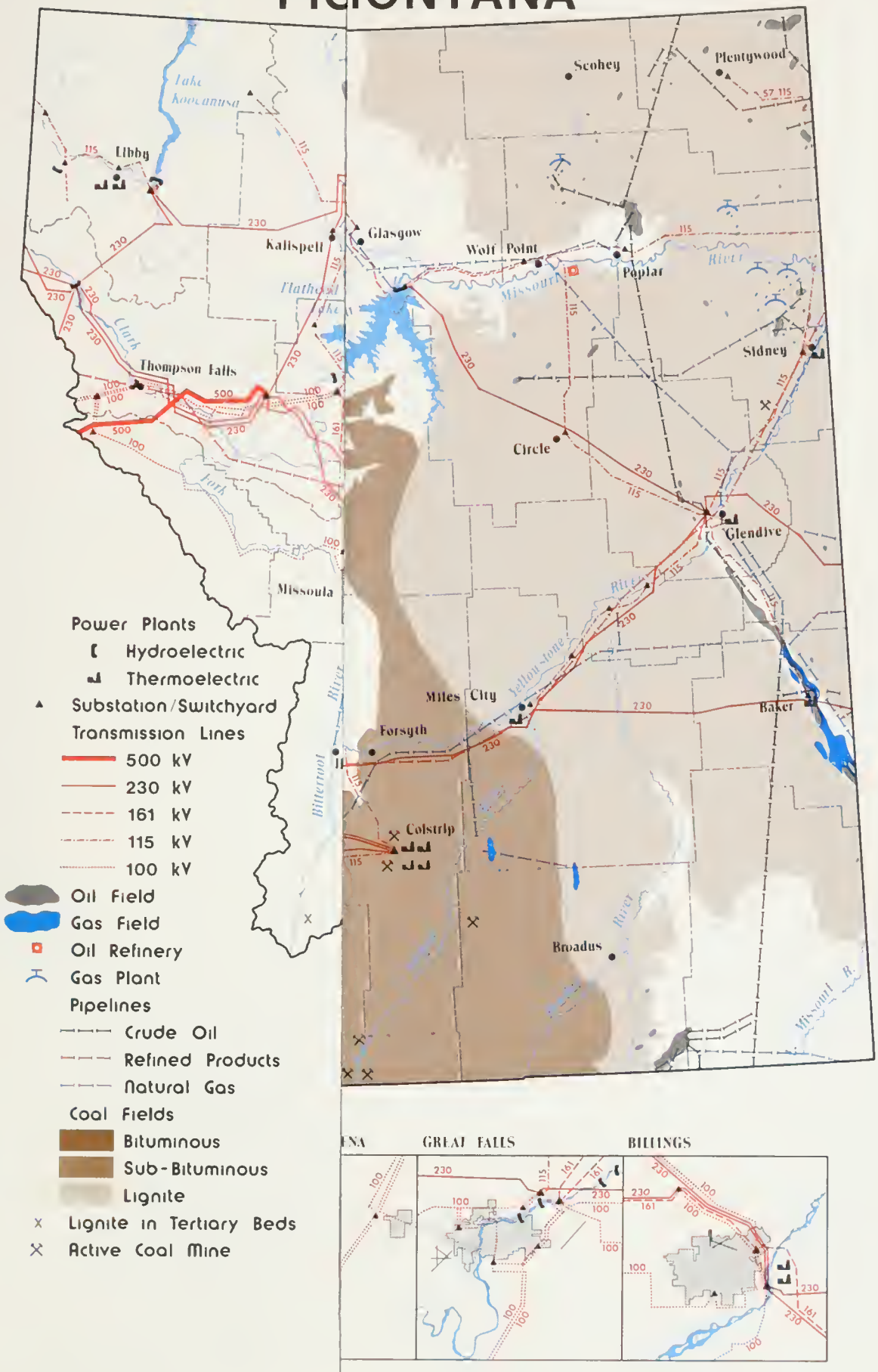
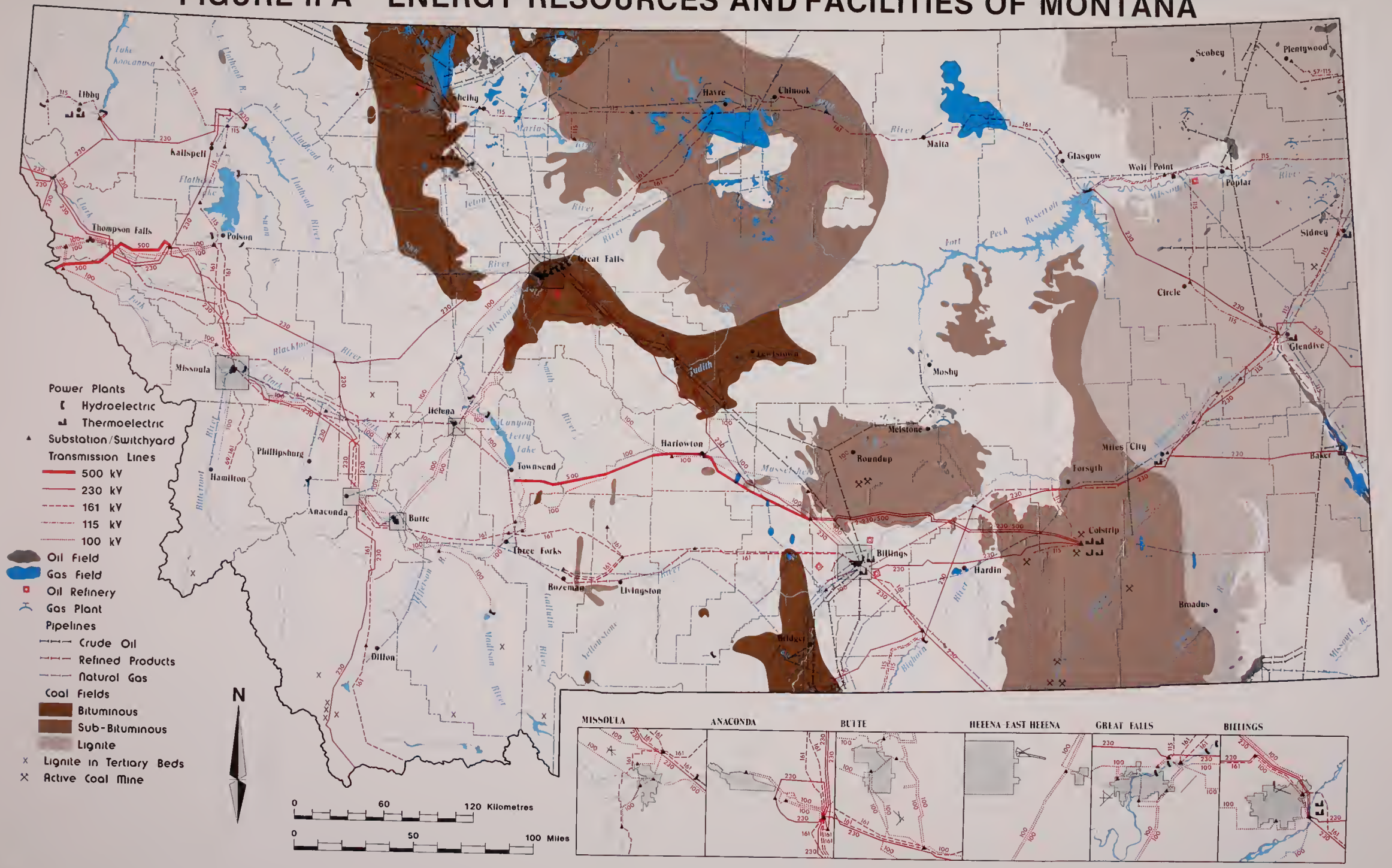

Power Plants
Hydroelectric
Thermoelectric
Substation/Switchyard
Transmission Lines
500 kV
230 kV
161 kV
115 kV
100 kV
Oil Field
Gas Field
Oil Refinery
Gas Plant
Pipelines
Crude Oil
Refined Products
Natural Gas
Coal Fields
Bituminous
Sub-Bituminous
Lignite
Lignite in Tertiary Beds
Active Coal Mine
Libby
Kalispell
Glasgow
Scobey
Plentywood
Wolf Point
Poplar
Sidney
Thompson Falls
Missoula
Circle
Glendive
Miles City
Forsyth
Baker
Colstrip
Broadus
Lake Koocanusa
Flathead Lake
Clark Fork
Bitterroot River
Missouri River
Yellowstone River
Missouri R.
ENA
GREAT FALLS
BILLINGS

FIGURE II-A ENERGY RESOURCES AND FACILITIES OF MONTANA



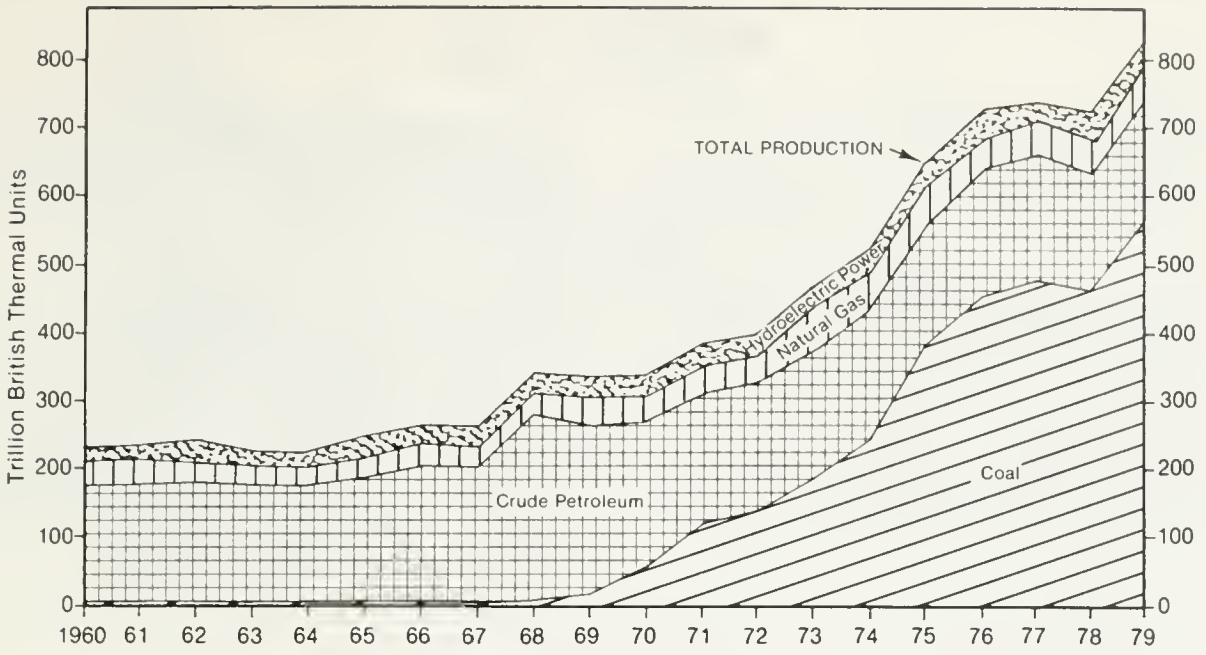


FIGURE II-B PRODUCTION OF ENERGY IN MONTANA, BY TYPE OF FUEL, 1960-1979

Source: Department of Natural Resources and Conservation, Energy Division, *Montana Historical Energy Statistics*, 4th edition, 1980.

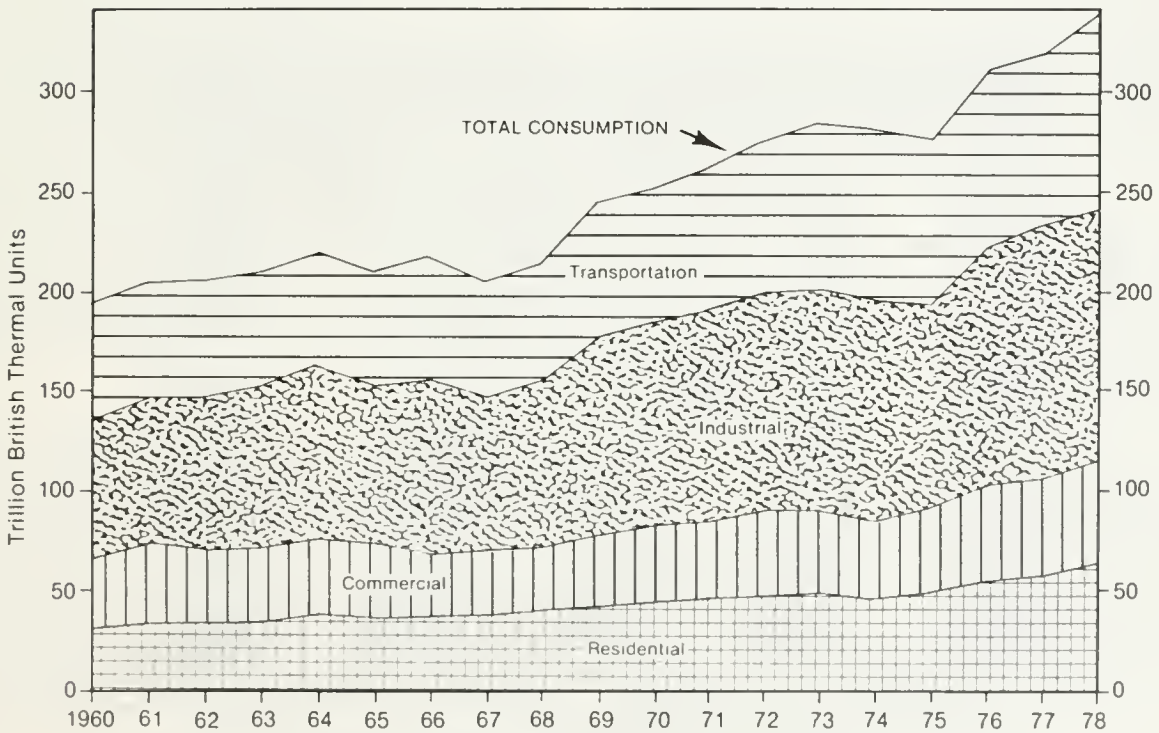


FIGURE II-C CONSUMPTION OF ENERGY IN MONTANA, BY SECTOR, 1960-1978

Source. Department of Natural Resources and Conservation, Energy Division, *Montana Historical Energy Statistics*, 4th edition, 1980.

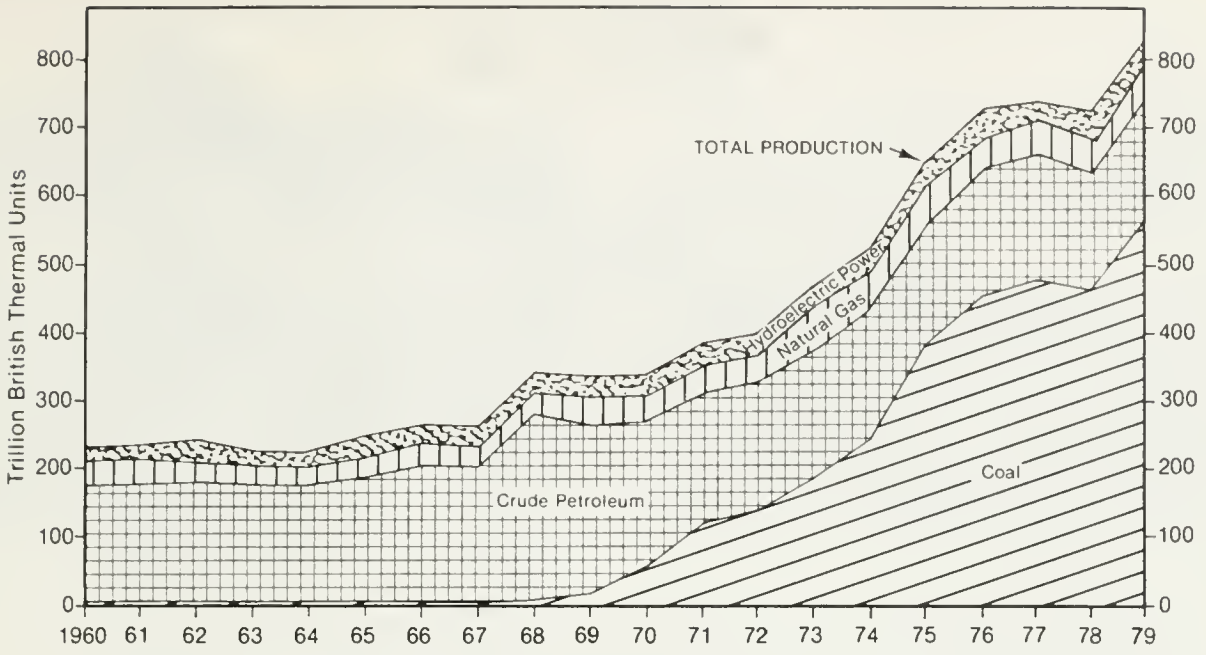


FIGURE II-B PRODUCTION OF ENERGY IN MONTANA, BY TYPE OF FUEL, 1960-1979

Source: Department of Natural Resources and Conservation, Energy Division, *Montana Historical Energy Statistics*, 4th edition, 1980.

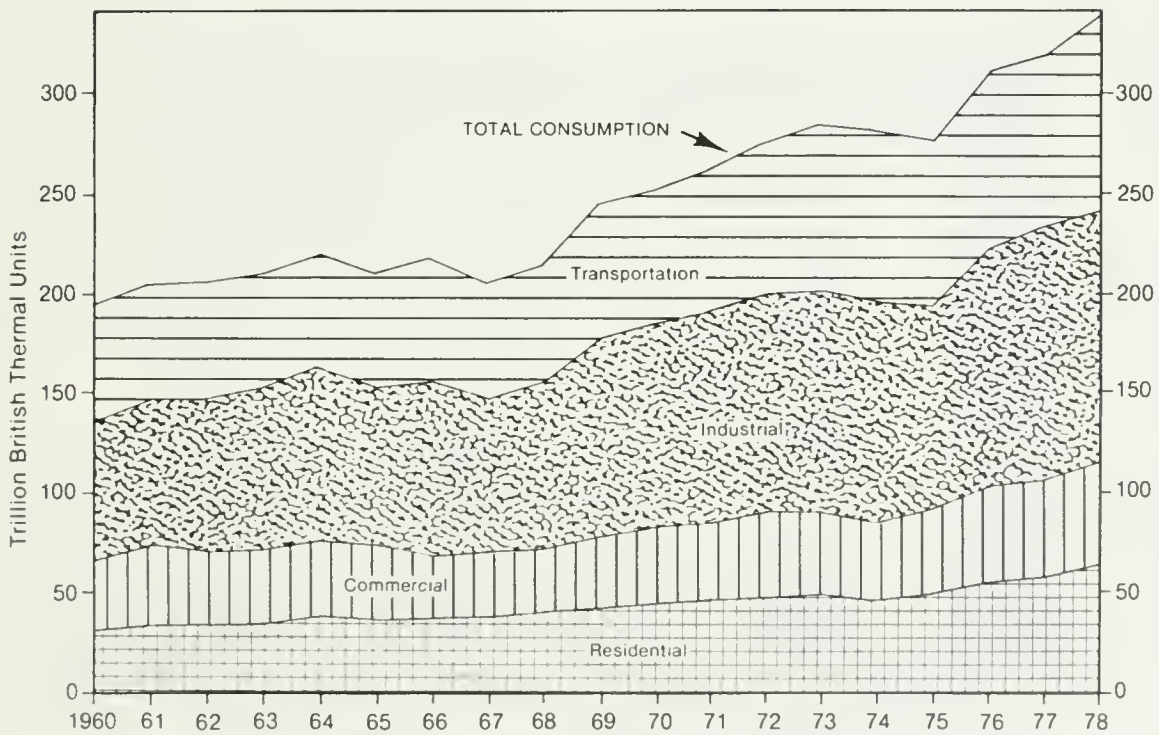


FIGURE II-C CONSUMPTION OF ENERGY IN MONTANA, BY SECTOR, 1960-1978

Source. Department of Natural Resources and Conservation, Energy Division, *Montana Historical Energy Statistics*, 4th edition, 1980.

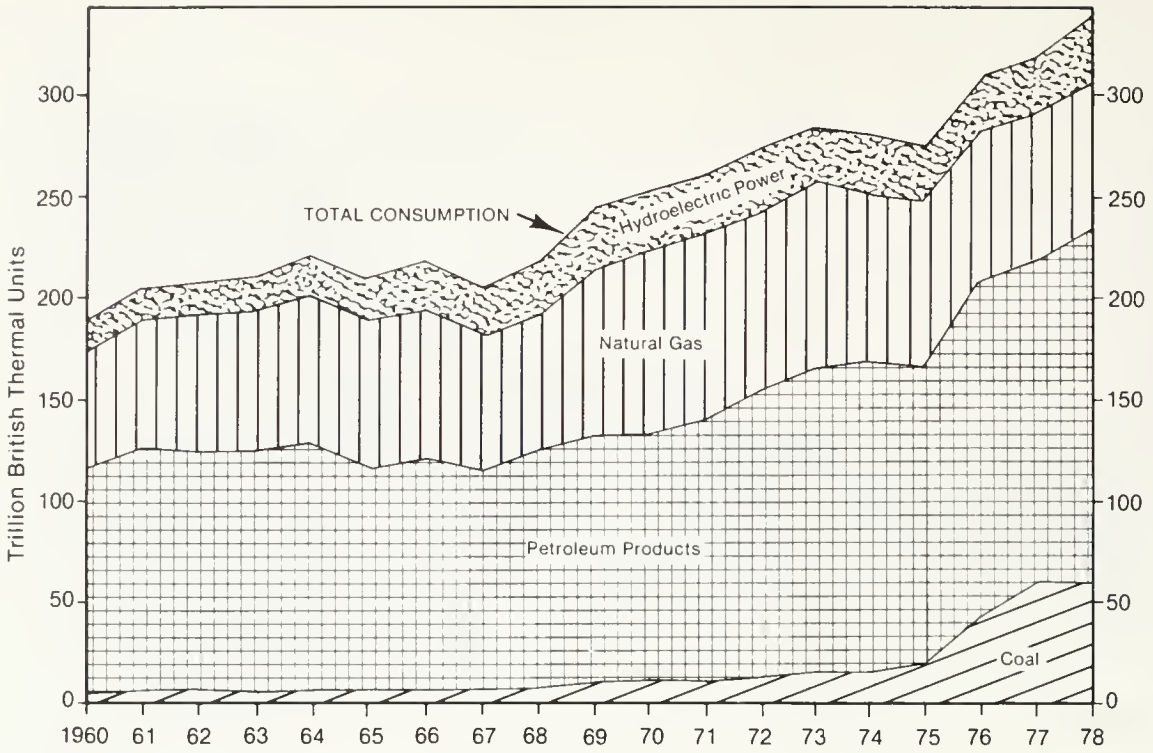


FIGURE II-D CONSUMPTION OF ENERGY IN MONTANA, BY TYPE OF FUEL, 1960-1978

Source: Department of Natural Resources and Conservation, Energy Division, *Montana Historical Energy Statistics*, 4th edition, 1980.

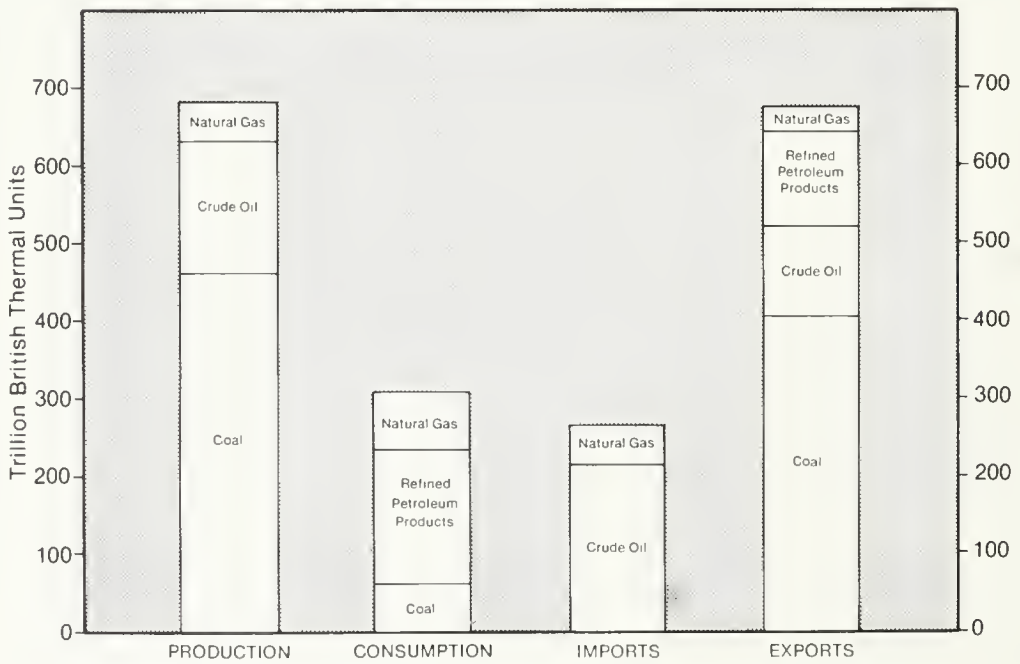


FIGURE II-E PRODUCTION, CONSUMPTION, IMPORTS AND EXPORTS OF FOSSIL FUELS IN MONTANA IN 1978

Source: Department of Natural Resources and Conservation, Energy Division, *Montana Historical Energy Statistics*, 4th edition, 1980.

2.1. COAL

Montana produced nearly 50 times as much coal in 1978 as in 1968. Crude oil, natural gas, and hydroelectric power production have remained relatively constant by comparison, over the same period.

Coal now accounts for 64 percent of the energy produced in Montana, but only 18 percent of the energy consumed in Montana. This is illustrated in Figures II-B and II-D. Ninety-five percent of the coal burned in Montana is used to generate electricity; approximately one-half of this electricity is sold out-of-state. Approximately 90 percent of the coal mined in Montana is exported to other states.

Two of the nation's 19 major coalbeds (i.e., those producing at least 7.9 million tons in 1978) are located in Montana: the Dietz and Rosebud coalbeds together produced 21.9 million tons of subbituminous coal in 1978.

Montana had 120,568.9 million short tons demonstrated coal reserve base in 1976. This is 27.5 percent of the demonstrated reserve base in the U.S. On a national basis, at least half the coal reserve base was estimated to be recoverable. Sixty-one percent of the U.S. demonstrated subbituminous reserve base is located in Montana.

2.2. CRUDE OIL

Of the 30 million barrels of crude oil produced in Montana in 1979, 70 percent was exported, due in part to the fact that two of the most significant production areas, the Williston and Powder River basins, are not connected to the state's major refineries in Billings. Instead, the crude oil from these areas is shipped out of state. The Billings refineries account for nearly 90 percent of Montana's total refined petroleum product output and depend heavily on Canadian and Wyoming imports. Of the 50,619,676 barrels of crude oil refined in Montana in 1979, 46.6 percent came from Canada, 36.3 percent from Wyoming, 17.1 percent from Montana, and .01 percent from North Dakota. Approximately half the petroleum products refined in the state are exported, primarily to Washington, Idaho, Wyoming, and North Dakota.

Dependence on unstable foreign sources of crude oil is one of the nation's most worrisome energy supply problems. (See Section 10.7 for a discussion of Montana and the 1979 fuel supply disruption.) Even supplies of oil from Canada are not secure because Alberta's oil quotas are determined on a monthly basis and, more important, these supplies are now provided only on an exchange or geographical trade basis.

Until October 1979, Canada was selling about 55,000 barrels of light crude oil to the U.S. each day, with about 45 percent of this allocation purchased by Montana refineries. As part of an effort to reduce its own dependence on foreign sources, Canada had scheduled an end to exported sale of oil in 1981. As a result of the 1979 world oil shortage and accompanying price escalation, Canada accelerated the phased cutback to ensure supplies of reasonably priced oil to eastern Canada refineries. Exports, reduced from 55,000 to 14,000 barrels per day in October 1979, were eliminated the following month.

To offset the loss of directly purchased Canadian oil, Canada has expanded U.S./Canadian exchanges. In this arrangement oil is delivered through the Glacier pipeline from Alberta to Montana refineries. In return the Montana refiner delivers an equivalent volume of crude oil to a refinery in eastern Canada.

This arrangement is subject to revision at any time at the discretion of the Canadian National Energy Board; it is therefore not a permanent solution to Montana's crude oil supply problems. Exchanges may continue to be negotiated, however, until an alternative source is available, such as Alaskan North Slope crude oil through the Northern Tier pipeline (see Section 3.1.5.1).

2.3. NATURAL GAS

Natural gas production in Montana was about 54 billion cubic feet (bcf) in 1979, a 14 percent increase over 1978 production. Of this amount, 34 bcf was exported to Canada, Wyoming, North Dakota, and the Midwest. The American Gas Association's 1978 estimate of Montana's proved reserves is about 992 bcf.

Natural gas sales in Montana were about 60 bcf in 1979, a 3 percent decrease from 1978 sales. Sales to residential and commercial customers amounted to 63 percent of the total; industrial and other customers purchased the rest. Montana Power Company (MPC) accounts for roughly two-thirds of Montana's total natural gas sales and sales for resale. MPC markets gas in the western two-thirds of Montana. Montana-Dakota Utilities (MDU) captures the remainder of Montana sales and sells in the eastern third of the state.

MPC imports approximately 58 percent of its natural gas supply from Canada and gets the rest from Montana sources. MPC's Canadian sources appear adequate (its Canadian subsidiaries' gas reserves are about 400-450 bcf), but Canada's gas pricing policy ties the price of natural gas exports to the price of crude oil delivered in Toronto. Currently the Canadian price is $4.47 per thousand cubic feet, which is $0.75 below the formula price. The Canadian government has decided to hold the price at this level at least until January 1, 1981, when a price increase will be considered.

MDU sells about 18 bcf of gas annually in Montana, 43 percent of which is produced in Montana and the remainder of which is produced in North Dakota or Wyoming. Because MDU presently does not have enough gas to supply all of its customers, some of its industrial (nonagricultural) customers are being required to curtail demand by 80 percent. Under present Federal Energy Regulatory Commission (FERC) regulations, agricultural customers are receiving 100 percent of their current requirements. Since January 1980, FERC has allowed MDU to add up to 7,500 new residential and small commercial customers per year, provided that it adds an average 40 bcf per year of net reserves to its system. MDU added a net of 71 bcf in 1978 and additional reserves in 1979. The company foresees continued success in adding reserves to assure an adequate supply for its system in the future.

The Natural Gas Policy Act of 1978 has initiated a phased-in deregulation of domestic natural gas that is scheduled to be completed by 1985. The rise in price that has taken place in response to the gradual lifting of price ceilings has both reduced demand and increased gas exploration and supply. The Natural Gas Policy Act affects both MPC and MDU, and therefore Montana, to the extent that they rely on domestic (U.S.) sources of gas.

Natural gas exploration in Montana is increasing. There is considerable interest in the Overthrust Belt and the Williston Basin areas. Further discussion of this exploration is presented in Section 10.6.

2.4. ELECTRICITY

Total generating capacity in Montana is 3,320 megawatts, of which 2,214 is hydroelectric and 1,106 is thermal. The thermal capacity consists of 939 megawatts coal-fired, 69 megawatts oil or gas, and 84 megawatts gas or diesel peaking units. The thermal capacity includes 14 megawatts of wood-fired generation for in-plant use at the St. Regis Lumber Company in Libby. The ownership of the hydropower is 1,173 megawatts federal, managed by the Corps of Engineers and the Water and Power Resources Service, and 1,041 megawatts private. The thermal generation is all privately owned.

In an average water year the expected hydroelectric output is 2,090 average megawatts. (One average megawatt equals 8.76 million kWh.) In a year with critical water (defined for planning purposes as the lowest flows on record) in all river basins, hydroelectric generation would drop to 981 average megawatts. The average output of thermal electric generating facilities is around 775 average megawatts. Thus, a total of 2,090 average megawatts (18.3 million MWh) is generated in Montana during an average water year, and 1,764 average megawatts (15.4 million MWh) is generated during a critical water year.

TABLE II-2

NET ELECTRIC POWER GENERATION

(megawatt hours)

	1977	1978	1979
Montana Power Company	5,891,897	6,492,873	6,557,915
Washington Water Power (Noxon)	1,137,223	2,043,985	1,737,581
Puget Sound Power & Light	1,723,586	1,865,105	1,857,615
Montana-Dakota Utilities	327,142	318,329	320,604
Pacific Power & Light (Big Fork)	28,451	30,515	27,517
Montana Light & Power (Troy)	61,045	73,148	66,090
Federal Facilities			
Bonneville Power Admin. (Hungry Horse, Libby)	2,423,933	2,787,832	2,598,518
Western Area Power Admin. (Canyon Ferry, Ft. Peck, Yellowtail)	1,874,557	3,112,402	2,585,806
TOTAL	13,467,834	16,724,189	15,751,646

SOURCE: DNRC Energy Division, phone calls to individual companies.

PROSPECTIVE ENERGY DEVELOPMENT IN MONTANA

A wide range of major energy development projects, including coal-related developments, pipelines, hydroelectric facilities and electric transmission are presently pending in Montana (see Figure III-A for a map showing proposed new energy development in Montana). A number of the projects have been applied for under specific state or federal laws while others are in the early planning stage and have not yet been formally proposed. The status of each project is noted individually.

3.1. FOSSIL ENERGY

3.1.1. POTENTIAL NEW COAL MINES

Table III-1 lists potential new coal mines in Montana. All mine permit applications are processed by the Department of State Lands in accordance with the Montana Strip and Underground Mine Reclamation Act, the federal Surface Mining Control and Reclamation Act of 1977, and other state and federal laws.

TABLE III-1
POTENTIAL NEW MONTANA COAL MINES

	Estimated Maximum Production (Million Tons Per Year[1])											
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Expected mines[2]												
Consol CX Ranch	—	—	—	—	1.0	3.0	5.0	7.0	8.0	8.0	8.0	8.0
Decker North	0	0	1.1	1.5	1.6	2.0	2.0	2.5	2.5	2.5	2.4	2.4
Montco	—	—	—	—	—	1.0	2.0	4.0	6.0	6.0	6.0	9.0
PKS CX Ranch	—	—	—	—	—	1.0	2.0	4.0	4.0	4.0	4.0	4.0
WECo Area C[3]	0	0	0	0	1.4	4.2	5.6	5.6	5.6	5.6	5.6	5.6
Area D	0	0	0	0	0	0	0.6	3.8	3.8	3.8	3.8	3.8
TOTAL	0	0	1.1	1.5	4.0	11.2	17.2	26.9	29.9	29.9	29.8	32.8
Possible mines[4]												
Bear Tooth	—	—	—	—	—	0.3	0.5	1.5	1.5	2.0	2.0	2.0
Louisiana Land & Exploration	—	—	—	—	0.2	0.7	1.2	1.7	2.0	2.0	2.0	2.0
Northern Resources[5]	—	—	—	—	0.3	1.0	2.0	3.0	4.0	5.0	6.0	6.0
Shell Young's Creek[6]	—	—	—	—	—	—	—	—	2.0	5.0	8.0	8.0
WECo Dominy	—	—	—	—	—	—	—	1.0	2.5	4.0	4.0	4.0
TOTAL	0	0	0	0	0.5	2.0	3.7	7.2	12.0	18.0	22.0	22.0
Other mentioned mines[7]												
Amoco	—	—	—	—	—	—	—	0.5	2.0	4.0	8.0	10.0
Cook Mountain[8]	—	—	—	—	—	—	—	—	3.0	6.0	10.0	10.0
Northern Minerals	—	—	—	—	—	—	—	—	—	3.0	8.0	13.0
Northern Resources	—	—	—	—	—	—	—	—	—	2.0	10.0	10.0
Otter Creek[8]	—	—	—	—	—	—	3.0	5.0	5.0	5.0	5.0	5.0
Tenneco[9]	—	—	—	—	—	—	—	—	—	2.0	13.5	13.5
Tract II	(would probably not be developed in the near future unless the Absaloka mine were not to receive a needed permit)											
Wesco	—	—	—	—	—	—	—	—	—	2.0	10.0	12.0
TOTAL	0	0	0	0	0	0	3.0	5.5	10.0	24.0	64.5	73.5
Grand Total	**0**	**0**	**1.1**	**1.5**	**4.5**	**13.2**	**23.9**	**39.6**	**51.9**	**71.9**	**116.3**	**128.3**

[1]Mines typically do not reach maximum rates of production until the third or fourth year after opening.
[2]Expected mines are known extensions of existing mines or are actively preparing a permit application.
[3]Assumes Colstrip Unit 3 goes on line in late 1983.
[4]Possible mines are those with a resource base that would support the production level, though some of the later mines would need a lease renewal.
[5]Assumes that Basin Electric locates in Circle.
[6]This mine would be on the Crow Indian Reservation.
[7]Other mentioned mines are those that would require renewed state, federal or private leasing. Many of these mines will not be developed unless a major synthetic fuels effort occurs.
[8]Assumes that the construction of the rail line into the Montco site results in development of this site.
[9]This mine-gasification complex would straddle the Montana-North Dakota border and possibly involve parts of both Dawson and Wibaux counties.

SOURCE Northern Powder River Basin EIS Team, Department of State Lands, September 1980.

3.1.2. COAL-FIRED ELECTRIC GENERATION

3.1.2.1. BASIN ELECTRIC POWER COOPERATIVE

In 1979 Basin Electric Power Cooperative, a North Dakota-based utility, released a two-volume study entitled "Preliminary Base Load Planning and Siting Study for Proposed Coal-Fired Generation." The study identifies sites capable of accommodating two 500-megawatt coal-fired generating facilities, the first of which would begin operating in 1989. Basin's electric service area is split into east and west portions with the western portion including the service areas of most of the rural electric cooperatives in the eastern two-thirds of Montana and Wyoming as well as parts of Colorado. The project is known as the "Sunrise" project. The top three sites identified in the study are the Circle, Montana, area and areas near Gillette and Arvada, Wyoming. Since releasing the study, Basin has conducted meetings for government officials and the public and contracted for additional environmental impact and engineering studies to identify four square-mile sites within the site areas. Although Basin expects to select a preferred site by late 1980, its planning schedule will be delayed at least one year due to lower electric demand than was previously predicted. If the Circle site is selected, Basin will file an application under the Major Facility Siting Act in late 1981.

3.1.2.2. MONTANA POWER COMPANY

Montana Power Company (MPC) conducted a siting study in 1979 which resulted in the selection of four areas in Montana for possible siting of a 350 megawatt coal-fired power plant known as Resource 89. The four areas are near Chester, Hardin, and east and southeast of Great Falls, respectively. MPC studied fuel, water, labor availability, and other resources and also consulted with a 24-member citizens' committee. The Montana Energy and MHD Research and Development Institute (MERDI) is presently under contract with MPC to conduct baseline studies at the four sites. MPC expects to file an application with DNRC in early 1981. Construction is scheduled to begin in late 1985 with the plant scheduled to begin operating in 1989. MPC may obtain coal in the Belt-Stanford area if either of the Great Falls sites or the Chester site is selected. Each of the sites is being evaluated in terms of its capability for accommodating a second 350 megawatt unit. According to MPC's long-range plans, an application for the second 350 megawatt unit will be filed in 1986.

3.1.2.3. CROW TRIBE

The Crow Tribe has received $750,000 from the U.S. Department of Energy (DOE) to study the feasibility of building a 350-400 megawatt coal-fired electrical generator on the Reservation. Part of the power produced (100 megawatts) could be used to power a coal gasification plant currently under study (see Section 3.1.3.5.). Five potential sites are being evaluated for locating the plant. A peak labor force of 1,000-1,100 is anticipated for the power project, the construction of which will be phased so that peak labor force does not occur at the same time as for the gasification plant. The Council of Energy Resource Tribes is conducting the study.

3.1.3. COAL GASIFICATION

3.1.3.1. MONTANA POWER COMPANY

According to MPC's long-range plan, the company is continuing to investigate the economics and feasibility of coal gasification, including the possibility of a joint project with Montana-Dakota Utilities. MPC has stated that any proposal will depend on various factors, including available coal supply, development of technology, and availability of capital.

3.1.3.2. TENNECO

In April 1980, Tenneco Coal Gasification Company filed its first annual long-range plan under the Major Facility Siting Act. This plan, in the form of a DOE grant application for $20 million, described a project development study for a coal gasification plant that would use 13.5 million tons per year of coal to produce 250 million cubic feet per day of synthetic natural gas using the Lurgi process. The plant

FIONTANA

21	Hungry Horse Rereg (WPRS)
22	Fort Benton (WPRS)
23	Fort Peck Rereg (Army Corps)
	Northern Tier Pipeline (oil) - State Recommended
	Northern Tier Pipeline (oil) - St. Ignatius Alternate
	Northern Border Pipeline (Natural gas)
	Colstrip - Hot Springs 500 kV line

Refit - Installation of additional generators

Rereg - Peaking power facility

Syntuel

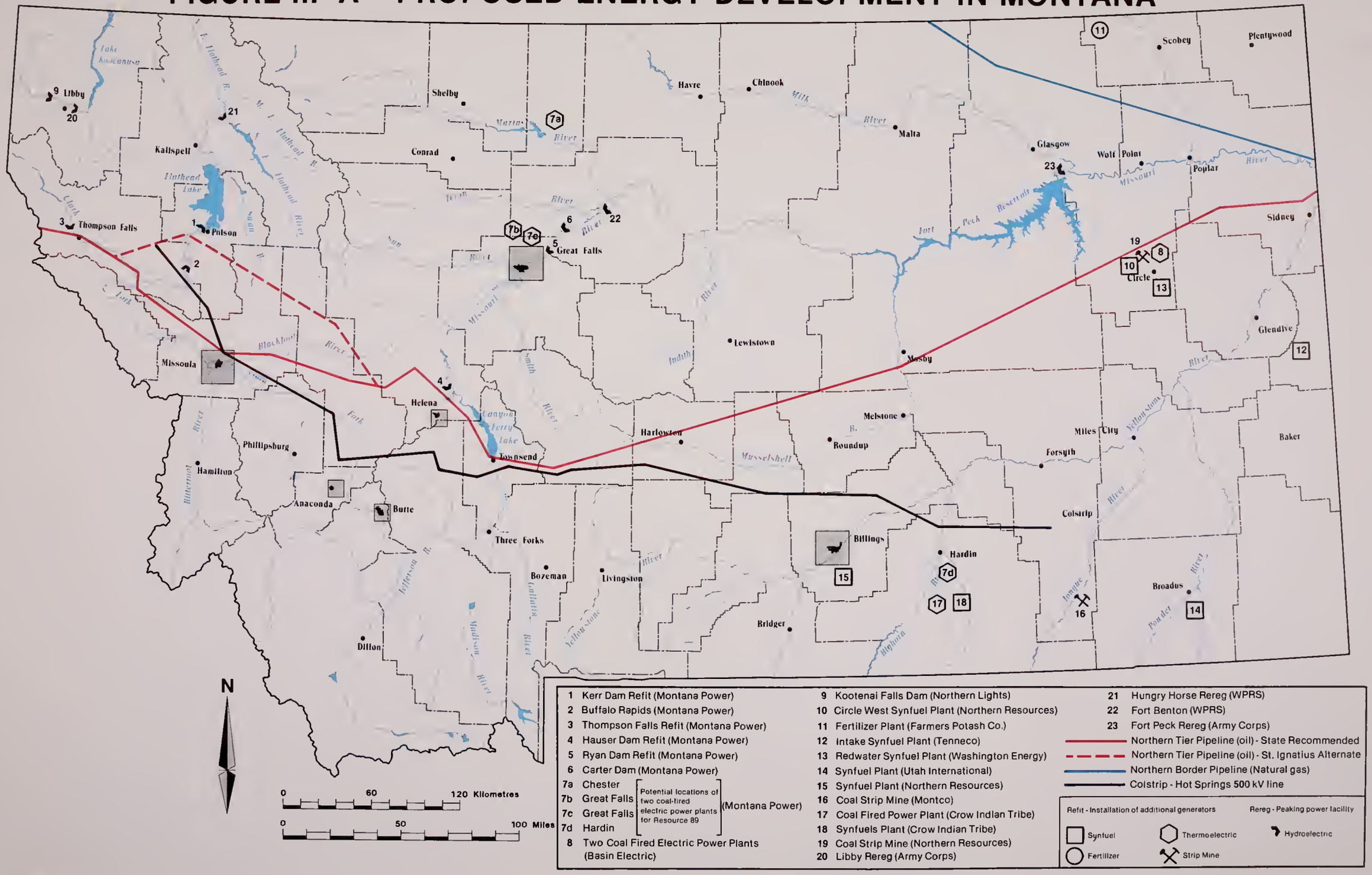
Thermoelectric

Hydroelectric

Fertilizer

Strip Mine

FIGURE III-A PROPOSED ENERGY DEVELOPMENT IN MONTANA



1 Kerr Dam Refit (Montana Power)
2 Buffalo Rapids (Montana Power)
3 Thompson Falls Refit (Montana Power)
4 Hauser Dam Refit (Montana Power)
5 Ryan Dam Refit (Montana Power)
6 Carter Dam (Montana Power)
7a Chester
7b Great Falls
7c Great Falls
7d Hardin
Potential locations of two coal-fired electric power plants for Resource 89 (Montana Power)
8 Two Coal Fired Electric Power Plants (Basin Electric)
9 Kootenai Falls Dam (Northern Lights)
10 Circle West Synfuel Plant (Northern Resources)
11 Fertilizer Plant (Farmers Potash Co.)
12 Intake Synfuel Plant (Tenneco)
13 Redwater Synfuel Plant (Washington Energy)
14 Synfuel Plant (Utah International)
15 Synfuel Plant (Northern Resources)
16 Coal Strip Mine (Montco)
17 Coal Fired Power Plant (Crow Indian Tribe)
18 Synfuels Plant (Crow Indian Tribe)
19 Coal Strip Mine (Northern Resources)
20 Libby Rereg (Army Corps)
21 Hungry Horse Rereg (WPRS)
22 Fort Benton (WPRS)
23 Fort Peck Rereg (Army Corps)
Northern Tier Pipeline (oil) - State Recommended
Northern Tier Pipeline (oil) - St. Ignatius Alternate
Northern Border Pipeline (Natural gas)
Colstrip - Hot Springs 500 kV line
Refit - Installation of additional generators
Rereg - Peaking power facility
Synfuel
Thermoelectric
Hydroelectric
Fertilizer
Strip Mine

would be scheduled for full production by 1990. Potential sites have been identified in Wibaux and Dawson counties, Montana, and the area surrounding Beach, North Dakota, along with a number of sites in other states. The Wibaux site was chosen as the proposed site prior to final application to DOE.

Intake Water Company, a subsidiary of Tenneco, Inc., has signed a contract with DNRC's Water Resources Division to gather baseline data for an environmental impact statement on the impoundment of Beaver Creek, near the Montana-North Dakota border. Tenneco plans to assess use of this reservoir for the gasification plant as well as water supplies from the Powder and the Yellowstone rivers in Montana and from Lake Sakakawea in North Dakota. According to Tenneco's long-range plan, Intake presently has water rights for 80,650 acre-feet per year from the Yellowstone River, and has applied for a Water Use Permit to appropriate water from Beaver Creek. The project development study will include an analysis of all potential pipelines from water supplies to plant sites. A pipeline to transport the synthetic natural gas would be built to connect with existing or proposed natural gas pipelines. A connection with the Northern Border Pipeline in North Dakota is one of the options Tenneco is considering.

3.1.3.3. WASHINGTON ENERGY COMPANY

Wesco Resources, Inc., headquartered in Billings, is assessing the feasibility of synthetic fuels development in the McCone County area on behalf of Washington Energy Company of Seattle. One 250 million cubic feet per day gasification plant, requiring up to 10.3 million tons of coal per year, is under consideration. A Major Facility Siting Act application could be filed in 1982, with construction planned for 1985 and operation for 1988. Both federal and state coal will have to be made available before the company can proceed with development plans. Wesco is considering Fort Peck as a possible water source. In early 1980 Wesco applied for a feasibility study grant of $4 million from DOE but was not selected for funding. The application for the "Redwater Project" grant was resubmitted for the second round of DOE funding in November 1980 and is awaiting notification.

3.1.3.4. UTAH INTERNATIONAL, INC.

Utah International, Inc. (UI) has options to lease and purchase agreements affecting approximately 60,000 acres and at least 500 million tons of strippable coal known as the Moorhead deposit in Powder River County. In 1979 UI informed DNRC that the deposit could be "sufficient for the requirements of several gasification plants," each of 250 million cubic feet per day capacity, if UI is successful in acquiring water and federal and state coal when leasing is resumed. An alternative use would be to build a mine-mouth electrical generating facility. UI filed for a water right in 1973, with plans to divert a portion of Montana's unallocated flow from the Powder River at a point in Northern Wyoming. In a suit against DNRC, Intake Water Company has challenged UI's date of filing. UI filed a countersuit asking the court to interpret the Yellowstone River Compact (see Section 5.10.5.4.) and determine whether water diverted in Wyoming but used in Montana should be accorded a priority-dated water right. UI has also challenged the Board of Natural Resources' January 1979 water reservation orders concerning the Powder River. UI disputes the Board's determination that water reservation orders take precedence over applications for water rights which were filed before the orders but on which the Board had not taken action prior to issuing the orders.

Uncertainties concerning acquisition of coal and water make it impossible to predict when or if UI will apply for a certificate to construct a coal conversion facility.

3.1.3.5. CROW TRIBE

The Crow Indian Tribe received a $2.7 million grant from DOE in 1980 to study the feasibility of building a synthetic fuel plant on the Crows' reservation. A plant capable of producing synthetic gas (125 million cubic feet per day) with the energy equivalent of 22,000 barrels of oil a day will be studied. The projected nine-month study will explore the financial, environmental, socio-economic, and technical feasibility of building a synfuel plant. The grant application was prepared by the Tribal Council, Pacific Coal Gasification, and Fluor Engineers. Pacific Coal Gasification would operate the $3-4 billion plant, but the Tribe would own a 51-80 percent equity in the plant. Five sites on the Reservation are presently being studied. Peak construction is planned for 1984-85 with completion scheduled for 1987. A peak labor force of 3,000 is anticipated for the plant. Power to the plant could be supplied by a new coal-fired electrical generator which is also currently being studied (see Section 3.1.2.3.). Plans call for phasing construction of the two projects so that both are not at peak employment at the same time. Two coal mining companies involved in developing Crow coal—Shell Oil Company and Westmoreland Resources—will provide information on coal reserves for the plant.

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Wesco Resources, Inc., headquartered in Billings, is assessing the feasibility of synthetic fuels development in the McCone County area on behalf of Washington Energy Company of Seattle. One 250 million cubic feet per day gasification plant, requiring up to 10.3 million tons of coal per year, is under consideration. A Major Facility Siting Act application could be filed in 1982, with construction planned for 1985 and operation for 1988. Both federal and state coal will have to be made available before the company can proceed with development plans. Wesco is considering Fort Peck as a possible water source. In early 1980 Wesco applied for a feasibility study grant of $4 million from DOE but was not selected for funding. The application for the "Redwater Project" grant was resubmitted for the second round of DOE funding in November 1980 and is awaiting notification.

3.1.3.4. UTAH INTERNATIONAL, INC.

Utah International, Inc. (UI) has options to lease and purchase agreements affecting approximately 60,000 acres and at least 500 million tons of strippable coal known as the Moorhead deposit in Powder River County. In 1979 UI informed DNRC that the deposit could be "sufficient for the requirements of several gasification plants," each of 250 million cubic feet per day capacity, if UI is successful in acquiring water and federal and state coal when leasing is resumed. An alternative use would be to build a mine-mouth electrical generating facility. UI filed for a water right in 1973, with plans to divert a portion of Montana's unallocated flow from the Powder River at a point in Northern Wyoming. In a suit against DNRC, Intake Water Company has challenged UI's date of filing. UI filed a countersuit asking the court to interpret the Yellowstone River Compact (see Section 5.10.5.4.) and determine whether water diverted in Wyoming but used in Montana should be accorded a priority-dated water right. UI has also challenged the Board of Natural Resources' January 1979 water reservation orders concerning the Powder River. UI disputes the Board's determination that water reservation orders take precedence over applications for water rights which were filed before the orders but on which the Board had not taken action prior to issuing the orders.

Uncertainties concerning acquisition of coal and water make it impossible to predict when or if UI will apply for a certificate to construct a coal conversion facility.

3.1.3.5. CROW TRIBE

The Crow Indian Tribe received a $2.7 million grant from DOE in 1980 to study the feasibility of building a synthetic fuel plant on the Crows' reservation. A plant capable of producing synthetic gas (125 million cubic feet per day) with the energy equivalent of 22,000 barrels of oil a day will be studied. The projected nine-month study will explore the financial, environmental, socio-economic, and technical feasibility of building a synfuel plant. The grant application was prepared by the Tribal Council, Pacific Coal Gasification, and Fluor Engineers. Pacific Coal Gasification would operate the $3-4 billion plant, but the Tribe would own a 51-80 percent equity in the plant. Five sites on the Reservation are presently being studied. Peak construction is planned for 1984-85 with completion scheduled for 1987. A peak labor force of 3,000 is anticipated for the plant. Power to the plant could be supplied by a new coal-fired electrical generator which is also currently being studied (see Section 3.1.2.3.). Plans call for phasing construction of the two projects so that both are not at peak employment at the same time. Two coal mining companies involved in developing Crow coal—Shell Oil Company and Westmoreland Resources—will provide information on coal reserves for the plant.

3.1.3.6. NORTHERN RESOURCES, INC.

Northern Resources received a $200,000 grant from DOE in 1979 to study the feasibility of siting a coal gasification plant in the Billings area. The facility would be built in the Goggins Industrial Park just east of Billings and would be capable of converting 400 tons of coal per day into about 19 million cubic feet of gas per day. Because of its size, the facility would not be under the jurisdiction of the Major Facility Siting Act. An application to DOE for $3.9 million has been made for funding the project's engineering and technical planning. Two pipelines would be constructed in conjunction with the project. One would run from the Exxon refinery to the gasification plant and the other from the plant to the Conoco and Cenex refineries. Construction of the plant would cost about $47 million and would not begin before summer of 1981; it could begin as late as spring 1982. The plant would employ about 25 workers.

3.1.4. OTHER COAL CONVERSION

3.1.4.1. NORTHERN RESOURCES, INC.

Northern Resources, Inc., a joint venture of Burlington Northern and Resource Sciences Corporation, is pursuing the development of a strip mine on the Dreyer Brothers, Inc. Ranch in McCone County. The company plans to open a mine, scheduled for initial production by 1982, which could produce up to 16 million tons per year by 1990.

Basin Electric is currently considering the McCone County area for its two "west-side" 500 megawatt power plants (see Section 3.1.2.1.). If this area is selected for the plants, Northern Resources would provide six million tons of coal per year to Basin Electric. Even if Basin selects another site, Northern Resources intends to apply for a ten million ton per year mine to supply a Northern Resources lignite-to-methanol conversion facility in McCone County, the output of which would be used to fuel Burlington Northern locomotives. An application to DOE for a $5 million grant to study this plant was rejected, but Northern Resources intends to reapply. This conversion plant would be scheduled to begin operating in 1990 at the earliest.

In 1978 DNRC completed detailed baseline vegetation and wildlife studies for an 11.5 square mile area including the sites that were originally proposed in 1974 for a fertilizer and methanol-diesel plant and associated mine. DNRC has continued to coordinate vegetation and wildlife monitoring studies in this area. While the company estimates that a maximum of 2,000 acres would be disturbed over the life of the currently planned mine, the mine permit application will cover approximately 31.5 sections to include all areas that might be affected over the life of the mine. The company has contracted with the state to coordinate baseline vegetation and wildlife studies on this 31.5-section area.

3.1.4.2. BURLINGTON NORTHERN

In 1979 Burlington Northern (BN) proposed that the Timber Creek lignite deposit, west of Glendive, be dedicated to synthetic fuel development. The approximately 1.3 billion ton deposit is in checkerboard ownership, with the federal government owning 46 percent, Burlington Northern 43 percent, the state of Montana 7 percent, and other private parties 4 percent. In letters to Montana Governor Thomas L. Judge and the Secretary of the Interior, BN proposed pooling the reserves to permit logical development of the coal. BN estimates the deposit could support a facility capable of producing 100,000 barrels of synthetic crude oil per day for 50 years at a consumption rate of 25 million tons of lignite per year.

In response to BN's proposal, the U.S. Department of the Interior (DOI) indicated that it plans to make federal coal available to industry through standard leasing procedures. DOI advised BN to maintain contact with the local Bureau of Land Management office and to share its knowledge of the various coal deposits in the hope that a Known Recoverable Coal Resource Area (KRCRA) might be designated. KRCRAs are a means of targeting prime coal resources for consideration during the process of delineating and ranking potential tracts of coal that the federal government may offer for lease. In 1980 BN filed a general "expression of interest" in leasing its lignite deposits along with the federal deposits.

3.1.5. CRUDE OIL PIPELINES

3.1.5.1. NORTHERN TIER PIPELINE COMPANY

The Northern Tier Pipeline Company has proposed to construct new oil tanker berthing facilities at Port Angeles, Washington, with related transfer and on-shore oil storage facilities and a 1,550-mile pipeline system crossing the states of Washington, Idaho, Montana, North Dakota, and terminating at Clearbrook, Minnesota. The purpose of the system is to provide a transportation system for oil from a variety of sources to existing refineries in the Northern Tier states. The pipeline would have an initial capacity of 709,000 barrels per day, which would eventually be increased to a maximum of 933,000 barrels per day.

The Montana portion of the project would include approximately 630 miles of buried steel pipe, eight pump stations and a maximum of 75 feet of permanent right of way. In addition, two delivery facilities would connect the proposed pipeline to the Glacier Pipeline near Harlowton and the Western Crude Oil Pipeline near Richey. An estimated construction work force of 440 people will be needed in each of five sections of the line in Montana with additional personnel required for construction of the pump stations and delivery facilities.

DNRC released Montana's draft Environmental Impact Statement (EIS) on the Northern Tier Pipeline in October 1979. In addition, six technical supplemental reports were also published addressing the following concerns: soils and vegetation, wildlife, aquatic life and habitats, earthquake hazard, land use, and social and economic impacts.

To comply with the Montana Environmental Policy Act (MEPA), the draft EIS addressed alternatives to the proposed action, including construction of other crude oil transportation systems and non-construction alternatives. Of the construction alternatives, the Department concluded that Northern Tier would provide the lowest delivery cost. Of the non-construction alternatives, reallocation of crude oil supplies was found to be the most viable economically.

In the 10 public meetings DNRC held to gather comments on the draft EIS, public comment centered around the need issue. Public support for the pipeline is high in eastern Montana while opposition is great in western Montana.

The final EIS, issued in April 1980, contained three recommendations. One of the recommendations was a route similar to that proposed by Northern Tier. After further discussion Northern Tier modified its route to concur almost entirely with the state's recommended route.

A second recommendation was to create an Interagency Pipeline Task Force (IPTF) to coordinate the activities of state agencies by serving as a point of contact for Northern Tier, federal, state, and local agencies and the public. The IPTF was created in July 1980 and is funded by Northern Tier. It will provide information to Northern Tier, government agencies, and private landowners, but it will not have siting jurisdiction on private lands or authority to enforce permit conditions and easement stipulations issued by state agencies. By coordinating centerline studies, review of Northern Tier's plans and designs, and the logistics of surveillance, IPTF will expedite the permitting process.

The third state recommendation was that Northern Tier should compensate for adverse impacts associated with the pipeline, using one of three options: 1) compensation of unmitigated impacts; 2) compensation as an alternative to centerline relocation on a site-specific basis; and 3) compensation of unforeseen impacts (such as oil spills). It is not clear how much authority Montana permitting agencies have in requiring compensation.

Northern Tier Pipeline Company expects to begin construction in the spring of 1982, and has begun applying for state permits.

The federal final EIS was released by the Bureau of Land Management (BLM) in August 1979. Under the statutory authority of Title V of the Public Utility Regulatory Policies Act of 1978, the Secretary of the Interior recommended to President Carter and Carter agreed that Northern Tier's proposal be expedited and approved, conditional on private financing.

In April 1980, the Secretary of the Interior granted Northern Tier a right of way across federal lands. Northern Tier must have federal approval of the centerline within the two-mile-wide right of way and receive the necessary federal, state, and local permits before construction can begin. The Montana BLM office is the lead federal right-of-way agency.

Of the five states crossed by the pipeline, Idaho, North Dakota, and Minnesota have given right-of-way

approval, though Minnesota's approval is also conditional on private financing. Washington is currently studying the proposed system and has begun contested case hearings on the proposal. A Washington draft EIS was issued in November 1979, but decision on the site certificate may not be made until sometime in 1981.

As of this writing, Northern Tier has not received private financing.

Table III-2 lists the responsibilities of Montana state and local agencies regarding pipeline location and construction, and possible actions required for siting and construction.

TABLE III-2
RESPONSIBILITIES OF STATE AND LOCAL AGENCIES REGARDING PIPELINE LOCATION AND CONSTRUCTION, AND POSSIBLE ACTIONS REQUIRED FOR PIPELINE SITING AND CONSTRUCTION

ACTIVITY REQUIRING ACTION	FORM OF ACTION	LOCATION	SEQUENCE OF ACTION			REMARKS
			Planning	Construction[1]	Post Construction	
CITY AND COUNTY GOVERNMENTS						
Construction not in compliance with local zoning or planning	Zoning permit	Area covered by local planning	Issue permit	Monitor		Local zoning or planning control differs along pipeline route
Construction over county roads	Permit	County roads	Issue permit	Monitor		Crossing of roads owned by county requires supervision after issuance
CONSERVATION DISTRICTS						
Construction across perennial streams	Permit	Stream/river	Field work	Issue permit/ surveillance	Monitor	Permit may be granted before construction but monitoring must occur during construction
DEPARTMENT OF FISH, WILDLIFE AND PARKS						
Crossing of land owned or leased by the department	Easement	State lands	Grant easement	Surveillance		Easements can be issued prior to construction but conditioned by DFWP findings
Construction over streams or rivers	Recommendation	Stream/river	Field work	Recommended action	Monitor	Recommendations to conservation districts, and to USFS for national forests and "404 permit"
Construction affecting wildlife habitat	Recommendation	Key wildlife habitat	Field work	Recommended action	Monitor	Recommendations based on Fish and Wildlife Coordination Act USC 16 661 to 666C
DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES						
Construction affecting air quality - General	Permit	Construction sites	Issue permit	Monitor	Monitor	For petroleum storage and airborne particulates from road construction dust and open burning; issued before construction but dependent on DHES monitoring
- Open burning	Permit	Burn site	Issue permit	Monitor		Review and conditions

ACTIVITY REQUIRING ACTION	FORM OF ACTION	LOCATION	SEQUENCE OF ACTION: Planning	Construction[1]	Post Construction	REMARKS
DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES						
Operation affecting air quality	Permit	Compressor Station Site	Air quality modelling	Issue Permit	Monitor	Prevention of Significant Deterioration Permit includes a number of regulatory actions required by the federal Clean Air Act and amendments
Construction affecting water quality - General	Permit	Stream/river	Issue permit	Monitor	Monitor	Allows short-term activities that will create turbidity in excess of water-quality criteria
- Discharge test water	Permit		Issue permit	Surveillance		Discharge hydrostatic test water
Construction affecting municipal water sheds	Permit	Stream/river	Field work	Issue permit/ surveillance	Monitor	Contamination of water sources prohibited
DEPARTMENT OF HIGHWAYS						
Construction along and crossing highway right-of-way	Encroachment permit	Highways	Issue permit	Monitor		Regulates the location of a crossing
Crossing highway right-of-way	Permit	Highways	Issue permit	Surveillance		Permits construction of a ditch across a state or federal road
DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION						
Crossing state water-project land	Easement	State lands	Review data	Issue permit	Monitor	Approval by DNRC Board; Water Resources Division formulates easement conditions
Hydrostatic testing	Water use permit		Issue permit	Surveillance		Any appropriation of water requires water use permits
DEPARTMENT OF STATE LANDS						
Crossing state land	Easement	State lands	Field work	Issue permit/ surveillance	Monitor	Granting of easement may depend on a survey of cultural resources
Crossing navigable river bottoms	Easement	River bottoms	Field work	Issue permit/ surveillance	Monitor	State owned river bottoms - require crossing easement
Removal of fill material	Permit	Stream/rivers, quarries, mines	Field work	Issue permit/ monitor	Monitor	Permit limits amount that can be removed and places certain conditions on permittee
HISTORIC PRESERVATION OFFICE						
Construction affecting historic or other cultural sites	Permit	All lands	Field work	Issue permit/ monitor		Authority over state and sign-off authority over federal lands, conditioned on discovery of any cultural resources during construction

Monitoring periodically spot checking for violations of permit or easement
Surveillance actions involving field teams overseeing construction at a specified location This means an intense regulatory action

SOURCE: Northern Border Pipeline Draft EIS, 1980.

3.1.6. NATURAL GAS PIPELINES

3.1.6.1. NORTHERN BORDER PIPELINE COMPANY

Northern Border Pipeline Company (NBPC) is planning to construct an 809-mile (1294 km) natural gas pipeline, to be operated by the Northern Plains Natural Gas Company, from a point on the Canada-United States border near Port of Morgan, Montana, to a terminus in Ventura, Iowa. This pipeline is part of the Alaska Natural Gas Transportation System, a system proposed to transport natural gas from Alaska, through Canada to the U.S.

Approximately 184 miles of the proposed route would cross Phillips, Valley and Roosevelt counties in northeastern Montana. NBPC has received federal approval to construct the line, which will eventually be linked to the Alaska Highway Pipeline System to deliver 2.2 billion cubic feet per day of natural gas to the Midwest. The Company formally presented the project to Montana state officials in August 1978. The Company and DNRC entered into a contractual agreement in May 1979 to outline the EIS study and to arrange financing through fees collected under the Montana Environmental Policy Act. DNRC issued a draft EIS in August 1980 on the portion of the proposed pipeline located within Montana.

The draft EIS contains an economic analysis of the proposal and information on environmental impacts to rivers and streams, wildlife, and vegetation. It also contains information useful to landowners and local officials pertaining to fiscal and service impacts, crop and rangeland effects, and DNRC's recommendations on the project.

The Company plans to begin initial construction in Montana in late 1980. The main construction period, using two crews of 500-600 workers, will be in 1981. Approximately 800 million cubic feet per day of natural gas will be transported from Alberta before the Alaskan system is completed. This is why the southern portion of the system will be prebuilt. Although no deliveries are presently scheduled for Montana, the Company may negotiate with the Fort Peck Indian Tribes for natural gas service.

3.1.6.2. FUEL RESOURCES DEVELOPMENT COMPANY

Fuel Resources Development Company (Fuelco) has proposed to construct a natural gas pipeline in the Missouri River Breaks area. Fuelco is a Denver-based independent natural gas exploration and drilling company. The purpose of the pipeline is to transport natural gas from a recently discovered gas field to customers in Great Falls. The pipeline would tie into existing Montana Power Company pipelines.

The pipeline as proposed by Fuelco would be built in an area that is presently roadless and would cross the Missouri River about two miles downstream from the Stafford Ferry. Environmental concerns have been expressed about this project as proposed. The concerns are 1) this location is a paddlefish spawning area and construction would have adverse impacts; and 2) energy development in this roadless area could encourage further exploration, destroying the wilderness character of the area.

In October 1980, the U.S. Bureau of Land Management (BLM) rejected Fuelco's proposed pipeline route on environmental grounds. Several alternative routes have been developed by BLM, and Fuelco may submit an application for an alternative route.

3.2. HYDROELECTRIC FACILITIES

The projects summarized in this subsection include studies and proposals to construct new hydroelectric generation at new and existing sites on Montana's rivers and streams.

The U.S. Army Corps of Engineers National Hydroelectric Power Study is discussed in Section 7.4.1.1.

3.2.1. FACILITY EXPANSIONS

3.2.1.1. LIBBY ADDITIONAL UNITS AND REREGULATING DAM

The U.S. Army Corps of Engineers has proposed to add four new generators to Libby Dam on the Kootenai River and to construct a reregulating dam 10 miles downstream from the present dam. The new generators would increase the installed capacity at Libby from 420 megawatts to 840 megawatts and future operation of the dam would provide peaking ing power rather than baseload generation. The reregulating dam would reduce fluctuations on the Kootenai River that would otherwise result from the new operation. The amount of energy produced depends on the volume of water passing through the generators and the elevation difference or "head" between the lake level behind the dam and the water level below the dam. Since the addition of four more generators changes neither inflows to the reservoir, nor the head, eight generators will produce no more energy over time than the four currently in place, but they will produce the same energy in a shorter period of time during hours of peak electrical use.

The proposed addition of further generation at Libby Dam has stirred considerable controversy. Issues that have been raised include, among others, the question of need for the additional peaking power, the wisdom of inundating 10 more miles of the Kootenai River for the reregulating reservoir, the use of a reregulating facility to smooth river flows, and the impact of the project on the bald eagle, an endangered species.

A lawsuit filed by the Montana Wildlife Federation, the Montana Wilderness Association and the Libby Rod and Gun Club claimed that the project had not been authorized by the U.S. Congress and that it did not comply with the National Environmental Policy Act. A district court judge found that actual construction of the project did not have Congressional authorization, and also that the Corps had not adequately considered alternatives to the project. In 1979 the U.S. Court of Appeals for the Ninth Circuit found that the new generators could be installed in Libby Dam as this dam was authorized, but that all work on the reregulation dam must stop. The Court refused to hear a re-appeal.

At Senator Max Baucus' request, the General Accounting Office (GAO) reviewed the Corps' economic analysis of the Libby Additional Units and Reregulating Dam (LAURD) and published a report in November 1979. The GAO found the benefit-cost ratio to be 0.6 using the Corps production-cost model required by the U.S. Water Resource Council's new Principles and Standards. Since the model was not designed for projects such as LAURD, the Corps redesigned the production cost model so that the economics of the LAURD project could be evaluated adequately. The new model was completed in February 1980. The Corps analysis of the GAO report claims that GAO made false assumptions. State agencies are also reviewing the GAO study. DNRC and other state agencies have prepared

a position paper that evaluates a number of controversial issues concerning the proposed project.

The LAURD project has been removed from the public works bill in the U.S. House of Representatives and is currently in committee in the Senate. It was still pending at the October Congressional recess.

3.2.1.2. CANYON FERRY DAM

The potential for generating additional power at the existing Canyon Ferry Dam and for converting the facility to a peaking operation was initially identified in a 1976 U.S. Bureau of Reclamation (now the U.S. Water and Power Resources Service — WPRS) publication entitled the "Western Energy Expansion Study." Since then WPRS has conducted appraisal studies, due to be completed in 1980. The existing 50 megawatt powerplant is operated almost continuously throughout the year, with spills occurring during high flow months. Additional energy would be generated with this water, but the main purpose of additional generating capacity would be to convert to a peaking operation. Instead of generating almost constantly, the plants would be operated for two separate periods totaling about eight hours each day.

Legislation authorizing a feasibility study on the proposal to convert Canyon Ferry Dam to a peaking power facility was considered by the U.S. Congress in late 1979. This "fast track legislation" would also provide federal authorization for construction. After Congressional action, a feasibility study and an environmental impact statement would be prepared by WPRS. These investigations could take several years to complete.

The project has caused considerable concern among residents in the Canyon Ferry area. Concern has been expressed over water level fluctuations downstream from Canyon Ferry as a result of the peaking operation. In June 1980 WPRS ran a test to see how large those fluctuations would be. Initial tests indicated that they might be in the range of 1.8 to 2 feet. Earlier this year, the Montana Department of Fish, Wildlife and Parks submitted a proposal to Montana's Congressional delegation showing how some of the adverse impacts to fish, wildlife and recreation could be mitigated or compensated.

3.2.1.3. FORT PECK DAM

The Corps of Engineers has investigated a wide range of water resource problems and opportunities related to the Missouri River and its six mainstem dams along an area extending over 1,500 miles from Sioux City, Iowa to Three Forks, Montana. Subjects of the study include: 1) the feasibility of installing additional hydropower generating units both at the main stem dams and adjacent to the river; 2) resolution of bank erosion, waterlogging, and residual flood problems; 3) opportunities for recreation, fish, and wildlife enhancement; 4) operating plans of the main stem system concerning future water use; and 5) potential for extending navigation upstream from Sioux City.

The study specifically investigated the potential addition of 185 megawatts to the Fort Peck Dam and a reregulation dam at an investment cost of $84,253,000. The reregulation facility would virtually eliminate the downstream fluctuations that result from daily power peaking operations. About 200 acres of terrestrial habitat, including 50 acres of island, would be lost due to inundation, erosion, or bank slope adjustment in transforming eight miles of river to a reregulation reservoir. About 643 acres of existing dredge cut lakes would be isolated, blocking recruitment of river fish into the lakes. Fish populations would be virtually eliminated in the reregulation reservoir reach.

The investigation was conducted as part of the Review Report for Water Resource Development on the Missouri River, which was released by the Corps in 1977. The report has recently been returned to the Corps by the Secretary of the Army for additional studies. If it appears after further analysis that the project is in the public interest, a recommendation will be made to Congress to authorize construction. The additional studies will focus on the remaining unresolved issues: groundwater impact on farming and impact on the fishery. Studies will be initiated sometime in the next fiscal year and are scheduled to run through 1984.

3.2.1.4. HUNGRY HORSE DAM

The U.S. Water and Power Resources Service (WPRS) has recently completed an appraisal study of the potential for increasing power generation at the existing Hungry Horse Dam. A report detailing the findings, conclusions, and recommendations of the study should be available for public distribution late in 1980.

Three alternative plans that would increase power generation at Hungry Horse Dam were formulated and evaluated for economic, environmental, and social effects. These are: 1) the rewind alternative—raising the nameplate rating of the existing generators from 285 to 385 megawatts by rewinding

the units to achieve greater power output; 2) the outlet power alternative—adding a 55 megawatt powerplant at the existing outlet works to provide a total nameplate rating of 340 megawatts; and 3) the rewind plus outlet power alternative—rewinding the existing generators to 385 megawatts and adding a 55 megawatt power plant at the outlet works to provide a total nameplate rating of 440 megawatts.

A reregulating dam is included in each of the alternatives and would be located approximately 3.4 miles downstream from the existing Hungry Horse Dam. The reregulating dam would be an earthfilled structure about 51 feet high, and would have a maximum capacity of 1,950 acre feet of water. When full, the reservoir would inundate about 3.4 miles of the South Fork of the Flathead River and 45 acres of streamside forest from the reregulating dam site upstream to Hungry Horse Dam. The dam would be operated to minimize downstream fluctuations in the South Fork and main stem Flathead River caused by power operations of the Hungry Horse Power Plant.

Each of the alternatives would provide additional peaking capacity and increase average annual energy generation.

Legislation for a feasibility study is now under consideration by Congress and if approved, the WPRS could start detailed studies as early as 1982.

3.2.1.5. MONTANA POWER COMPANY

The Montana Power Company is studying the possibility of adding capacity at four of its existing hydroelectric plants. Preliminary indications are that these additions would add from 140 megawatts to 200 megawatts of capacity and about 55 megawatts of average energy. The plants are as follows: 1) Hauser Dam — existing capacity 16.5 megawatts, potential addition 20-50 megawatts, new powerhouse on left abutment; 2) Ryan Dam — existing capacity of 60 megawatts, potential addition 22 megawatts, new powerhouse adjacent to the existing one; 3) Thompson Falls — existing capacity 40 megawatts, potential addition 70-100 megawatts, new powerhouse adjacent to the existing one; 4) Kerr Dam — existing capacity 180 megawatts, potential addition 28 megawatts, upgrade existing generating equipment.

These additions would be available for commercial operation no earlier than 1987 or 1988.

3.2.2. NEW FACILITIES

3.2.2.1. NORTHERN LIGHTS, INC.— KOOTENAI FALLS

In April 1980, DNRC received an application as required by the Major Facility Siting Act (MFSA), from Northern Lights, Inc. for a certificate of public need and environmental compatibility for a 144 megawatt run-of-the-river hydroelectric facility at Kootenai Falls. The proposed dam would stretch 700 feet across the Kootenai River and back up water for approximately four miles. Water would be diverted to an underground powerhouse to produce about 500 million kilowatt hours of electricity annually. Seven rural electric cooperatives (Northern Lights, Lincoln, Glacier, Flathead, Missoula, Ravalli, and Vigilante) are participating in the project. Power would be distributed to the cooperatives through the Bonneville Power Administration grid system.

The Department has reviewed the Northern Lights application, and began working on an EIS in the fall of 1980. In cooperation with the Montana Department of Fish, Wildlife and Parks, DNRC had already completed a four-season baseline study on the aquatic and wildlife resources and vegetation of the Kootenai Falls area. Additional annual monitoring studies have been initiated.

The Federal Energy Regulatory Commission issued a draft EIS on the Kootenai Falls project in May 1980. DNRC is studying it to determine which parts will satisfy the environmental evaluation requirements of the MFSA.

In July 1980, DNRC met with state and federal agencies to identify the major issues and concerns raised by the proposal. In that same month, the Department also held informal meetings in four western Montana cities to hear public concerns about the Kootenai Falls proposal. The following are some of the issues that were identified during this process: 1) How much power is needed in the applicant's service area? 2) What effect will the facility have on the historical, archaeological, religious and cultural values of the area? 3) What effect will the facility have on the fish, wildlife and vegetation in

the area? 4) What effect will the facility have on the recreational and aesthetic values of the area? 5) What will be the associated social and economic benefits and costs, should the facility be constructed?

3.2.2.2. U.S. ARMY CORPS OF ENGINEERS—CLARK FORK-FLATHEAD HYDROPOWER STUDY

In response to Congressional direction, the U.S. Army Corps of Engineers conducted the Clark Fork-Flathead Hydropower Study to determine the feasibility of hydropower development on the Lower Flathead and Upper Clark Fork Rivers. Feasibility studies of six sites began in 1976 and were terminated in September 1979 when Congress deleted study funds from the 1980 federal budget. The sites under consideration were Buffalo Rapids 2 and 4, Sloan Bridge, Moiese, and Knowles on the Flathead River, and Quartz Creek on the Clark Fork.

A status report, prepared by the Corps of Engineers in December 1979, stated that "the Corps has serious doubt about the geotechnical suitability of the sites for dam construction, based on present knowledge of the foundation conditions and seismic assumptions and analysis," and that "strong local public opposition to hydropower development and adverse socio-economic and environmental impacts that would occur with hydropower development of the sites must also be recognized." The report concluded that "based on the findings of the preliminary studies conducted through 1979, no further consideration of hydropower development at the sites under study is warranted at this time." Montana Power Company, however, has indicated an interest in constructing a facility at Buffalo Rapids (see Section 3.2.2.6.).

3.2.2.3. U.S. WATER AND POWER RESOURCES SERVICE—UPPER MISSOURI REGION

The U.S. Water and Power Resources Service (WPRS), is examining the potential for new generation at a number of sites. The WPRS is continuing to study the feasibility of constructing a hydroelectric facility between Morony Dam and Fort Benton on the Missouri River. A "reformulation study" was started in October 1979 and is expected to take three years. The original proposal from an earlier study, for a high dam at Fort Benton and a reregulating dam downstream from the site, is unlikely to be recommended because the 150-mile stretch of the Missouri River downstream from Fort Benton is now a federal wild and scenic river.

Gibson Dam, located on the Sun River approximately five miles downstream from the confluence of the North and South Forks, can potentially accommodate an 11 megawatt two-unit power plant. Sun River Diversion Dam, located three miles downstream from Gibson Dam, could accommodate a 1.6 megawatt single-unit power plant if constructed in conjunction with the Gibson Dam proposal. The plants would require approximately 21 miles of 69 kilovolt transmission line.

Tiber Dam, located approximately 19 miles southwest of Chester, Montana, has potential for a 12 megawatt powerplant. A 72-inch outlet pipe was installed during initial construction of the dam to provide the discharge needed for power generation. Power could be transported by an existing 115 kilovolt transmission line.

Ongoing appraisal studies are also being conducted on the hydropower potential at Clark Canyon Dam and Yellowtail Afterbay Dam. Clark Canyon Dam is located on the Beaverhead River 18 miles southwest of Dillon, Montana, and has potential for a 3 megawatt powerplant. The river outlet of the dam would be fitted with a steel liner for use as the penstock. Power would be transported by an existing 24.9 kilovolt transmission line.

Yellowtail Afterbay Dam is located on the Big Horn River a short distance downstream from Yellowtail Dam. The Afterbay Dam has potential for a 10 megawatt powerplant to be operated as a run-of-the-river plant. Power would be transported through the existing Yellowtail transmission system.

WPRS is also studying wind energy potential at Tiber, Gibson, Canyon Ferry, and Yellowtail Dams.

3.2.2.4. TONGUE RIVER DAM

The 40-year-old earthen dam on the Tongue River in southeastern Montana has been classified by the U.S. Army Corps of Engineers as a high hazard dam because of the potential for loss of life and extensive property damage downstream, should the dam fail. Engineering studies contracted by the state of Montana have determined that the dam's spillway is too small to pass the probable maximum flood for the drainage area.

In response to requests from the Montana Legislature, DNRC is studying a number of alternative methods for correcting the problem. These include: rebuilding the existing dam and spillway; replacing it with a higher dam on the present site, or with a new and higher dam seven miles downstream; or breaching the existing dam entirely. Each of the

alternative proposals, except for the one that would eliminate the existing dam, provides for a 2 to 7 megawatt hydroelectric generation facility at the site. Some of the proposed alternatives address the possibility of mining state-owned coal within the reservoir to help finance the project.

DNRC held public meetings in southeastern Montana in June 1980 to hear the concerns of residents of the area and to help DNRC prepare a recommended course of action to the 47th Montana Legislature.

3.2.2.5. STATE-OWNED WATER PROJECTS

See Section 5.10.5.1. for a detailed discussion of DNRC's proposals to install hydroelectric generators at three state-owned water projects: Toston Dam on the Missouri River, the Painted Rock project on the Bitterroot River, and the Dead Man's Basin project on the Musselshell.

3.2.2.6. MONTANA POWER COMPANY

Montana Power Company has indicated plans to file applications for construction of dams and electric generating units at two new sites, Carter on the Missouri River near Fort Benton, and Buffalo Rapids on the Flathead River on the Flathead Indian Reservation. These facilities would tentatively be capable of generating 75 megawatts and 264 megawatts, respectively, with construction planned to begin in 1989.

3.3. NEW ELECTRIC TRANSMISSION FACILITIES

3.3.1. FALL RIVER RURAL ELECTRIC COOPERATIVE

The Fall River Rural Electric Cooperative of Ashton, Idaho, has applied to the U.S. Forest Service for permission to construct a 115 kilovolt transmission facility from Macks Inn, Idaho, to West Yellowstone, Montana. Because only eight miles of the line would be located in Montana, the Major Facility Siting Act does not apply. Additional miles of line may be required, however, to reach Ski Yellowstone, a new ski development proposed for the area. This could bring the transmission proposal under the minimum length requirements of the siting act. The cooperative has indicated that the proposed line is needed to meet present loads and to ensure reliability in the area regardless of whether Ski Yellowstone is ever developed. The line will initially be energized at 44 kilovolts and upgraded to 115 kilovolts later, if and when the loads become greater.

In late 1980 the U.S. Forest Service expects to complete an environmental assessment of the proposed transmission line. The Bonneville Power Administration has informed the Forest Service that it expects to build the line for Fall River Rural Electric Coop, with completion of construction scheduled for 1982.

3.3.2. WASHINGTON WATER POWER COMPANY

The Washington Water Power Company (WWP) planned to apply in 1979 for a certificate to construct a 230 kilovolt transmission line from Thompson Falls, Montana, to the Pine Creek substation in Idaho. The company's preliminary proposal indicated that 22 miles of the line would be located in Montana in an existing transmission corridor that follows Prospect Creek to Burke, Idaho, and primarily involves National Forest land. Alternative routes may be feasible, depending on Bonneville Power Administration (BPA) construction plans in the area (see Section 3.3.3.). According to WWP, additional power is needed at the existing Pine Creek substation to serve increased loads in the Coeur d'Alene and Wallace, Idaho, areas and to increase general system reliability. WWP has delayed its application for a certificate to await the findings of the ongoing BPA EIS studies of the Hot Springs — Bell 500 kilovolt line.

3.3.3. BONNEVILLE POWER ADMINISTRATION

3.3.3.1. HOT SPRINGS - BELL 500 KILOVOLT TRANSMISSION LINE

The Bonneville Power Administration (BPA) plans to build this line to carry Colstrip power from Montana west to the Spokane, Washington, area and to reinforce the Pacific Northwest's high voltage transmission system. The line was first proposed in a planning supplement to BPA's 1975 Draft Program EIS, but BPA is now revising that proposal, having begun new studies in the fall of 1979 to evaluate a number of new alternate routes, landowner and com-

munity concerns, and system alternatives. The DNRC has been an informal participant on a steering committee for this project. A draft EIS will be published in October 1980, public comments accepted for approximately six weeks, and a final EIS released in late spring or early summer 1981. The line would be completed and energized in May 1984.

The transmission line will not necessarily begin at Hot Springs, Montana. BPA is studying other alternative routes that begin in the Missoula area, lead westward through the Ninemile Valley or along the Clark Fork, and depart the state via Lookout Pass, Prospect Creek, or Noxon.

Washington Water Power Company (WWP) has proposed a new transmission line between the Thompson Falls area and the Kellogg-Wallace-Pine Creek area of Idaho (see Section 3.3.2.). In its EIS on the Hot Springs-Bell line, BPA will consider transmission line alternatives proposed by both BPA and WWP on a "one-utility" planning basis. If, for example, BPA's final decision is to build the Hot Springs-Bell line through Kellogg and Wallace, WWP could tap that line there and would not need to construct a new transmission line from the Thompson Falls area.

3.3.3.2. TOWNSEND - HOT SPRINGS 500 KILOVOLT TRANSMISSION LINE

BPA has received Congressional approval to build a 500 kilovolt double-circuit transmission line in Montana from Townsend to Hot Springs. A two-mile-wide corridor was approved in September 1979, by the BPA, the Forest Service, and the Bureau of Land Management, and these agencies are currently evaluating alternate centerlines within the corridor for the portion of the line between Townsend and Garrison.

Strong public opposition to the line and the corridor route has surfaced in the Boulder, Deer Lodge, Clinton-Turah-Bonner, and Missoula areas. As a result, the three federal agencies are reopening consideration of alternate corridors in these areas. The agencies plan to complete construction of this segment of the line by July 1, 1983, the scheduled energization date of Colstrip Unit 3. Construction of the line west of Garrison will be delayed approximately one year from this schedule. The line will join the Hot Springs — Bell line (see previous subsection) either at Hot Springs or near Missoula (in which case it will not be continued to Hot Springs).

DNRC has filed an **amicus curiae** brief in support of a Washington state lawsuit against BPA, claiming state jurisdiction over certain aspects of BPA's transmission line construction. BPA is building the Colstrip line along a corridor other than the one approved by the Board of Natural Resources and Conservation (see Section 7.1.3.3. for full discussion). The extent of jurisdiction of Montana's Major Facility Siting Act may be clarified by the outcome of this lawsuit, or by further litigation.

3.3.3.3. LIBBY INTEGRATION

In September 1978, a court decision halted construction of the Libby Reregulating Dam and additional generators at Libby Dam (see Section 3.2.1.1.). After appeal, the original decision was overturned allowing installation of the additional generators to proceed. Once installed, however, they may not be operated unless the reregulating dam is authorized and built.

BPA plans to upgrade existing transmission facilities in the area to bring the additional energy into the system, or if the project is not constructed, to improve system reliability and correct certain transmission problems in the area. A 230 kilovolt double-circuit line from Libby via Bonners Ferry to Sandpoint, Idaho, may replace or be added to an existing Pacific Power and Light 115 kilovolt line.

BPA will make further studies to determine the specific location of the line. Results will be published in a Draft Location Supplement to the draft EIS that BPA has already published on this project.

3.3.4. WESTERN AREA POWER ADMINISTRATION

The Western Area Power Administration (WAPA), the federal power marketing agency in eastern Montana, proposes to construct a 230 kilovolt transmission line from Miles City to New Underwood, South Dakota, with an intermediate substation at Baker, Montana. The total length of the line is 328 miles, with 93 miles located in Montana. A transmission study of the area has indicated a need for improved system stability, improved reliability of service to existing loads, and capacity for future load growth. WAPA awarded construction contracts in the summer of 1980 with completion scheduled for summer 1982. WAPA physically owns the Montana and South Dakota portions of the line, and Montana-Dakota Utilities (MDU) owns the North Dakota portion. MDU and Basin Electric each own 25 percent of the capacity rights of the line, with WAPA owning the remaining 50 percent.

WAPA proposes to rebuild, and possibly relocate and upgrade to 230 kilovolts, its existing 161 kilovolt electric transmission line between Fort Peck and Havre. WAPA is now preparing a draft EIS on the project. The project is proposed to reduce maintenance and operational costs, make maintenance safer, reduce radio noise, and improve line reliability and voltage regulation. A final EIS will be released in August 1981, with a preferred corridor identified. Construction is tentatively planned to begin in the spring of 1983 and be finished in the fall of 1985.

WAPA plans to build new transmission lines to carry power from the U.S. Army Corps of Engineers' proposed additional generation at Fort Peck, and the U.S. Water and Power Resources Service's proposed generation at Fort Benton, if these projects are built (see Section 3.2.1.3. and 3.2.2.3.). WAPA is considering construction of a transmission line from Canyon Ferry Dam to either Helena or Great Falls if additional generation of approximately 125 megawatts is installed at Canyon Ferry (see Section 3.2.1.2.). If new generation is in the 90 megawatt range, however, existing transmission may be sufficient.

WAPA also proposes to build a new 115 kilovolt line from Williston, North Dakota, to Sidney, Montana, to serve new loads in the oil fields. Approximately seven miles of the line would be in Montana.

3.3.5. MONTANA POWER COMPANY

The Montana Power Company (MPC) plans to apply for certificates on a number of transmission lines as noted in Table V-5 in Section 5. Plans for some of these lines are more concrete than others.

In conjunction with Resource 89 (see Section 3.1.2.2.), transmission line studies, including power flow and stability, are underway. MPC has said it considers maximum utilization of the existing transmission system highly important.

3.3.6. BASIN ELECTRIC POWER COOPERATIVE

In an April 1979 report, Basin Electric Power Cooperative identified sites capable of accommodating two 500 megawatt coal-fired generating plants, the first of which would be brought on line in 1989 (see Section 3.1.2.1.). The top three sites identified in the study are near Circle, Montana, Gillette, Wyoming, and Arvada, Wyoming. If the Circle site is selected, Basin would file an application under the Major Facility Siting Act in late 1981. A 345 kilovolt transmission system would be constructed in eastern Montana to support the plants regardless of whether a Montana site or a Wyoming site is selected.

ENERGY LEGISLATION

4.1. MONTANA ENERGY LEGISLATION

Most of Montana's energy-related laws have been passed since 1971, in response to the growing interest in developing the West's energy resources and in the potential adverse impacts of extracting and converting nonrenewable energy sources. Considered in totality, the legislation summarized in this section is a statement of Montana's policy toward energy-related development. The laws are presented in five categories, with the recognition that some provisions could appropriately be placed in more than one category.

4.1.1. REGULATORY LEGISLATION

The regulatory laws relating to energy are administered primarily by DNRC, the Department of State Lands (DSL), and the Public Service Commission. A common theme is the recognition that environmental, social, economic and human health-related factors may be adversely affected by energy extraction, conversion and distribution activities. Minimization and mitigation of impacts, equitable distribution of energy production costs, reclamation of natural resources, and energy conservation are primary points of emphasis.

4.1.1.1. MAJOR FACILITY SITING ACT (Section 75-20-101 et seq. MCA)

This law, enacted in 1973, provides for comprehensive review of proposals to construct and operate certain kinds of facilities for generating, converting or transmitting energy in Montana. The Legislature found that additional facilities may be required to meet an increasing demand for electricity and other forms of energy, but that such facilities have major impacts on the environment, on population distribution, and on the welfare of the citizenry. To minimize adverse impacts, the Board of Natural Resources and Conservation must certify public need for and environmental compatibility of such facilities before construction begins. Air and water quality-related matters are the responsibility of the Board of Health and Environmental Sciences.

The Act applies to: 1) facilities that can generate 50 megawatts or more of electricity; 2) facilities that can produce 25 million cubic feet or more of gas per day; 3) facilities that can produce 25,000 barrels of liquid hydrocarbon products per day; 4) uranium enrichment facilities; 5) facilities that can use, refine or convert 500,000 tons of coal or more per year; 6) electric transmission lines greater than 69 kilovolts capacity, with certain exceptions for lines covering short distances; 7) facilities for developing and using geothermal resources capable of producing 25 million Btu per hour or more; 8) facilities for **in situ** coal gasification; and 9) pipelines leading from or to a facility as defined above. Facilities under exclusive federal jurisdiction are exempt.

Applications for facilities filed under the Act must include a description of the proposed facility, with discussion of alternative sites, an explanation of need for a utility facility, discussion of efforts to promote conservation and reasonable alternative energy sources and a filing fee, based on the estimated construction cost of the facility, to finance the state's evaluation.

The 1979 Legislature amended a number of substantive and procedural sections of the Major Facility Siting Act (MFSA) in order to clarify the schedule the state must follow in evaluating and reaching a decision on applications. Particular attention was given to the jurisdictions of DNRC and the Department of Health and Environmental Sciences (DHES). Applicants are now required to file a joint application with both departments for a certificate of environmental compatibility and public need and for the permits required by state air and water quality laws. Both departments must accept an application as complete before the evaluation process begins.

Within one year after accepting an application, DHES and the Board of Health, if applicable, within an additional six months, must issue a decision with regard to state and federal air and water quality laws. Compliance with air and water quality standards must be determined for the primary and reasonable alternate locations for a proposed facility. DHES's or the Board of Health's decision is conclusive on all air and water quality matters. The Board of Natural Resources retains its authority to determine that a site represents the minimum adverse environmental impact, and DNRC retains responsibility for evaluating impacts of altered air and water quality on terrestrial and aquatic environments. DNRC has 22 months following acceptance of an application for an energy conversion facility or major transmission line, rather than the 24 months previously allotted, to report to the Board. The time limit for DNRC's review and report for transmission lines under 30 miles long is one year.

An application may not be filed unless the facility is identified in a long-range plan submitted to DNRC at least two years before DNRC accepts the application (see Section 5.10.3.1.).

Applicants are required to submit baseline data for the preferred and reasonable alternate site locations identified in an application. At the applicant's option, an environmental study plan may also be submitted. DNRC may allow a credit against the required filing fee for information provided by the applicant, if it is valid and useful for preparing an environmental impact statement. With 30 days' notice, the credit may be reduced any time the DNRC needs the funds to carry out its responsibilities. DNRC may also contract with an applicant to provide information. Payments to DNRC must be credited against the filing fee and the fee must be sufficient to permit the Department, Board and other affected agencies to carry out their responsibilities. If there is no contract, applicants must pay the fee in installments according to a schedule developed by DNRC, and no one installment may exceed 20 percent of the total fee. Applicants are entitled to a refund with interest at 6 percent per year of any portion of the fee that remains after all procedures associated with facility certification have been completed.

The 1979 Legislature assigned specific time limitations to most phases of the hearing process. The entire process, from the date of the Department's report to the Board until the hearing examiner's report is filed, shall not exceed nine months unless the Board extends the time for good cause. The Board must make its decision within 60 days after the hearing examiner's report is submitted.

A certificate may not be granted unless the Board finds and determines: 1) the nature of the probable environmental impact; 2) that the facility represents the minimum adverse environmental impact, considering the state of available technology and the economics of various alternatives; 3) that the facility is consistent with regional plans for expanding utility grids and will serve system economy and reliability; 4) that the facility's proposed location conforms to state and local laws and regulations; 5) that the Board of Health has certified that the facility will not violate air and water quality standards and implementation plans; and 6) for a utility application, that the facility serves the public interest, convenience and necessity. Need, environmental impact, benefits to the applicant and the state, effects of resulting economic activity, and effects on public health, safety and welfare must be considered in making these determinations.

An initiative passed in 1978 amended the MFSA to require the Board of Natural Resources and Conservation to find that a number of conditions are met before a nuclear power plant may be certified. The voters of the state must then approve the facility either by referendum or initiative.

The MFSA requires annual submission of long-range plans by utilities and any person contemplating construction of a facility within the ensuing ten years. The plans must also be filed with the Public Service Commission, the Environmental Quality Council, DHES, and the Departments of State Lands, Highways, and Community Affairs.

Certificates may be revoked for failure to meet safety standards or failure to comply with any other conditions imposed by the Board. Penalties up to $10,000 per day may also be assessed. DNRC is responsible for monitoring the operation of facilities.

The 1979 Legislature amended the MFSA with respect to applications and certificates. Applicants are required to supplement an application as requested by DNRC, and DNRC may determine that the supplemental information requires an amendment to an application at any time before DNRC's final recommendation. Additional filing fees or a new application may be required as the Department determines necessary to carry out its responsibilities. If an applicant wishes to amend a certificate, DNRC has 30 days to determine whether the proposed change would materially increase any environmental impact or substantially change the location of all or a portion of the facility. If the Department determines that there would be a material increase in impact or substantial change in location, the Board must hold a hearing and then render a

decision; otherwise the Board must automatically grant the amendment, as proposed or with conditions.

4.1.1.2. PUBLIC UTILITY RATE REGULATION (Section 69-1-101 et seq. MCA)

The Public Service Commission (PSC) supervises and regulates all public utilities that produce or deliver heat, street and railway service, light, power, water (for business, manufacturing, household use or sewerage), telegraph or telephone service. The Commission consists of five members elected from geographic districts for four-year terms.

Public utilities are required to provide reasonably adequate service at reasonable rates. Rate schedules must be filed with the PSC and any changes in the rates require PSC approval. Before approving a rate change the PSC must publish a notice of the proposed change, announce a hearing date and inform the public how to participate. Hearings are conducted under contested case provisions of the Administrative Procedures Act. The PSC may ascertain the value of the utility's property and take into account its expenses and capital in setting the rates. Case law has also established that utilities must have an opportunity to earn a fair rate of return on their investments. Utility advertising costs may not be included as expenses except for advertising that encourages energy conservation or development of renewable energy sources. If the PSC takes no action within nine months after requested changes are filed, the new rates may become effective. If the final order of the PSC later reduces the increase, the revenues collected in excess of the final order will be rebated to consumers plus 10 percent annual interest.

The PSC may investigate all aspects of the management of a public utility's business and may regulate the issuance of securities. Permission to issue or acquire securities will be granted unless it would be inconsistent with the public interest or for a purpose not permitted by law or the aggregate amount of securities outstanding or proposed would exceed fair market value of the utility's property.

Either on its own motion or on receiving a complaint alleging unfair, discriminatory or unreasonable rates, inadequate service, or unreasonable rules or procedures, the PSC may conduct an investigation and hold a hearing after which it may issue orders adjusting rates, procedures and service. Any interested party may appeal an order to district court within 30 days. Unless an injunction is granted to stay an order, it becomes effective in 20 days. If new evidence is raised at the trial, the PSC may redetermine an order.

4.1.1.3. PIPELINE REGULATION (Section 69-13-101 et seq. MCA)

This law determines that common carriers (pipelines) of petroleum or coal products are of public interest and subject to state regulation. The PSC may establish and enforce rates and regulate the gathering, transportation, loading and delivery of the product. Carriers must make monthly reports to the PSC and as with other utilities, the business is open to PSC inspection. Discrimination in prices or services is prohibited.

4.1.1.4. STRIP AND UNDERGROUND MINE RECLAMATION ACT (Section 82-4-201 et seq. MCA)

This law, passed in 1973 and revised extensively in 1979, applies to coal and uranium strip and underground prospecting and mining operations that remove more than 10,000 cubic yards of mineral or overburden per year. The Board of Land Commissioners and the Department of State Lands (DSL) administer the law.

The reclamation law declares it is "the policy of this State and its people: 1) to maintain and improve the State's clean and healthful environment for present and future generations; 2) to protect its environmental life support system from degradation; 3) to prevent unreasonable degradation of its natural resources; 4) to restore, enhance, and preserve its scenic, historic, archaeologic, scientific, cultural and recreational sites; 5) to demand effective reclamation of all lands disturbed by the taking of natural resources; and 6) to require the Legislature to provide for proper administration and enforcement . . . in order to achieve the aforementioned objectives." The Legislature found it necessary to require permits for mining operations, a comprehensive plan for reclamation and an adequate performance bond, and to prohibit mining on certain land.

A one-year permit must be secured from DSL before any exploratory work may begin. A prospective map, reclamation plan and description of prospecting techniques must be submitted, and a reclamation bond must be posted.

Before mining begins, a five-year permit, contingent on an acceptable reclamation plan for the affected land, vegetation and water, must be secured. A bond is also required to cover actual reclamation

costs. The permit application must include written consent or waiver by the surface owner(s) of the proposed mining area.

According to the law, DSL may not approve a mine application if: 1) any part of the proposed operation would be contrary to the purpose of the act; 2) the proposed site or neighboring area includes land having special, exceptional, critical or unique characteristics (these are defined as: a) biological productivity essential to certain wildlife species or domestic stock; b) ecological fragility, in the sense that the land could not return to its former ecological role in the reasonably foreseeable future; c) ecological importance, in the sense that mining could precipitate a system-wide reaction of unpredictable scope; and d) scenic, historic, archaeologic, topographic, geologic, ethnologic, scientific, cultural or recreational significance, with particular attention to Plains Indian history and culture); 3) the overburden on any part of the area has historically proved to be a problem in terms of landslides or various forms of water pollution (DSL shall delete that area from the mining plan); and 4) the operation constitutes a hazard to a personal dwelling or public property (such areas shall be deleted).

The mining operation must begin reclamation "as rapidly, completely and effectively as the most modern technology and the most advanced state of the art will allow." The law requires specific actions and includes technical requirements for backfilling, grading and topsoil replacement. The operator is required to submit annual progress reports, but may propose alternatives in the process if they are consistent with the intent of the act. DSL may order appropriate changes.

All fees, forfeit funds and other money collected under the act are put in the mining and reclamation fund for administering and enforcing the act and for reclamation.

The act provides several types of legal recourse against violations, including: 1) state suits against the mine operator for civil penalities of between $100 and $5,000 per violation per day; 2) a misdemeanor for willful violation carrying a $500 to $10,000 per day penalty; 3) a resident's suit against a public official to compel him or her to enforce any provision being violated; and 4) a suit for damage against the operator by an owner of real property whose use of underground water is impaired.

Several changes in the law were made by the 1979 Legislature to comply with the federal Surface Mining Control Act of 1977. These changes included more stringent civil penalities for violations, authorization for designating lands unsuitable for mining process, and restrictions on mining in certain alluvial valley floors. The law was also changed to allow revegetation to cropland or pastures as an alternative to predominantly native species.

4.1.1.5. STRIP-MINED COAL CONSERVATION ACT (Section 82-3-101 et seq. MCA)

In passing this act in 1973, the Legislature declared it the public policy of Montana to provide for orderly development of strip mining to assure wise use and prevent waste of coal. Coal which 1) can be removed by methods adaptable to the mine location, 2) is economically feasible to mine and 3) is fit for sale in the usual course of trade, must be taken.

This act was automatically repealed when Montana's permanent coal program went into effect. As a part of the permanent program, the Legislature incorporated this act into the Strip and Underground Mine Reclamation Act.

4.1.1.6. STRIP AND UNDERGROUND MINE SITING ACT (Section 82-4-101 et seq. MCA)

Passed in 1974 and amended in 1975, this act applies to coal and uranium mines and establishes a state policy "to provide adequate remedies for the protection of the environmental life support systems from degradation and provide adequate remedies to prevent unreasonable depletion and degradation of natural resources."

The act applies to any mining operation removing more than 10,000 cubic yards of mineral or overburden per year. A mine site location permit must be secured from DSL before any preparatory work is begun, including all onsite disturbances (except prospecting) such as railroad building and transmission line construction and erection of draglines and loading shovels. Within one year of receiving a complete application, DSL must notify the applicant if the application is acceptable, in which case a one year permit is issued. The permit is renewable until a permit is secured under the Strip and Underground Mine Reclamation Act. DSL may not issue a permit if it finds that: 1) the proposed mine violates the purposes of the act; 2) the area could not be approved under the selective denial criteria of the reclamation act (Section 82-4-201 et seq. MCA); or 3) reclamation plans do not meet the requirements of the reclamation act. Content of the application for a mine site location is specified in the regulations. Each application must include a reclamation plan.

Before a permit is issued, the applicant must post a surety bond of between $200 and $10,000 per acre unless the actual reclamation cost is higher. Forfeiture of a bond means an operator is ineligible for future permits unless the site is reclaimed without cost to the state. All fees and forfeit bonds are credited to a mining and reclamation fund and are spent, by appropriation, for administering and enforcing the act and for reclamation of land and water.

In the event of violations, all permits held by the operator are suspended and no further permits will be issued if violations are repeated. Additionally, the operator is liable for civil penalties or misdemeanors for willful violations. The latter incur a fine of between $500 and $5,000 per violation per day.

Any resident who knows the act or DSL regulations are not being enforced must first request an enforcement action but then may sue the responsible state officer, if necessary, to compel him or her to enforce the provisions.

4.1.1.7. COAL MINING LEASES AND PAYMENTS (Section 77-3-301 et seq. MCA)

The Board of Land Commissioners is authorized to lease state lands to allow mining of coal where the state owns the mineral rights. Leases must be awarded through a competitive bid system (including a bonus for the first year's rental) and the state must be compensated commensurate with the market value of the coal reserves, as determined by the Board. All mining operations must be carried out in an orderly manner and must not make subsequent mining more difficult or expensive. All leases require that the coal be mined, handled and marketed in a manner that will prevent waste.

Leases are issued for 10 years, as long as the operation is producing commercial quantities of coal. If it is not, the lease is terminated unless the operator has a strip mining or mine site location permit before the 10-year term expires. Leases may not be issued to foreign corporations or domestic corporations that sell to foreign sources, except for Mexican and Canadian companies. Also, leases may not be issued for strip-mining operations that would adversely affect future deep mining.

Payments are on a rent and royalty basis. Rentals must be at least $2 per acre and royalties must be at least 10 percent of the mine-mouth price of the coal. Rates may be adjusted at the end of the initial 10-year lease and every five years thereafter. Rentals and royalties are credited to the school fund.

4.1.1.8. GEOTHERMAL RESOURCES— LEASES ON STATE LAND (Section 77-4-101 et seq. MCA)

The Board of Land Commissioners is authorized to lease state land, including the beds of navigable streams and lakes, for exploration and development of geothermal resources. Leases for other uses, such as coal mining, do not include rights to geothermal resources. Leases are generally for not more than 640 acres and are for an initial 10-year term. The lessee is expected to be diligent in exploration and development and is required to pay an annual "delayed exploration penalty" after the third year if activities have not begun or continued. Rentals and royalties, based on energy, minerals and chemicals produced, are credited to the state's general fund and must equal at least $2 per acre per year. The state reserves all surface rights to land leased for geothermal development.

4.1.1.9. OIL AND GAS LEASES ON STATE LAND (Section 77-3-401 et seq. MCA)

The Board of Land Commissioners is authorized to lease state lands for which the state holds the oil and gas rights. Lease arrangements are the same as those described for geothermal development, except that the lease may be terminated if drilling has not begun within two years, or if, after drilling a dry hole, a new well is not begun before the anniversary of the lease following completion of the first well, or if delay drilling penalties are not paid. Rental fees and royalties are set by the Board. Leases may also be granted for up to 20 years for underground storage facilities for natural gas. Prevention of waste or destruction of the resource is a major condition accompanying all leases.

4.1.1.10. OIL AND GAS RESOURCE CONSERVATION (Section 82-11-101 et seq. MCA)

The Board of Oil and Gas Conservation is authorized to regulate oil and gas production in order to prevent waste, including practices that might result in inefficient extraction, excessive surface loss, inefficient storage or unnecessary dissipation of reservoir energy. The Board, whose seven members represent the public, landowners and the oil industry, has broad powers to supervise drilling operations in order to prevent pollution and for safety purposes. The Board may require restricted production rates for some types of wells in the interest of conservation.

Board regulations allow only one well to be drilled in each drilling or spacing unit except under unusual circumstances. The Board may order well-spacing units for an oil and gas pool in order to prevent waste. The size of the spacing units is based on the depth of the wells and anticipated areal drainage of the wells at that depth. The Board is authorized to issue orders, on request, to unitize a field or portions thereof for secondary recovery projects. Such an order must be based on a hearing that establishes that the unit is necessary to increase ultimate recovery, that the benefits outweigh the costs, and that the pool to be included has been reasonably defined by drilling operations. The order is not effective unless approved by 80 percent of the owners involved.

Well owners must plug abandoned wells and restore the disturbed land to its previous grade and productive capability unless the surface owner agrees in writing, and with Board approval, to a different restoration plan. Well owners must notify surface owners of intention to plug and abandon a well. The Board may draw on the Resource Indemnity Trust Fund (see Section 4.1.5.2.) to restore land if a well owner cannot be located or identified.

Before drilling, an operator must file a notice and secure a permit from the Board. Companies engaged in oil and gas development must pay a drilling permit fee and a privilege and license tax on production in addition to posting a bond sufficient to assure that each dry or abandoned well is properly plugged. Revenues are used to administer and enforce the law.

4.1.1.11. GEOPHYSICAL EXPLORATION PROTECTION (Section 82-1-101 et seq. MCA)

Any person engaging in geophysical exploration that requires the use of explosives and seismographic measurements must obtain a permit from the county in which the work is to be done. A bond must be filed to assure that holes are properly plugged to avoid adverse impacts on ground water.

4.1.1.12. UNDERGROUND GAS STORAGE RESERVOIRS REGULATION (Section 82-10-301 et seq. MCA)

This law gives limited condemnation rights to natural gas utilities for land to be used for gas storage reservoirs, which provide for orderly withdrawal of gas reserves in periods of peak demand. Areas in current oil production or capable of such are exempt. The Board of Oil and Gas Conservation must hold a hearing and find that the land is suitable for such use and that the public interest is served by the reservoir.

4.1.1.13. PETROLEUM PRODUCTS REGULATION (Section 85-15-101 et seq. MCA)

The Department of Business Regulation establishes standards and specifications for petroleum products based on nationally recognized standards. Petroleum dealers must be licensed and the Department may investigate all dealer facilities and records. Annual fees are assessed on each pump, meter and tank. This equipment must be calibrated and approved by the Department.

4.1.1.14. SALE AND MARKETING OF COAL (Section 82-3-201 et seq. MCA)

The Department of Business Regulation enforces this act which requires all entities "mining, shipping or producing coal, and. . .wholesaling, jobbing, exchanging, offering for sale or selling at retail any coal in this state" to keep accurate and complete copies of all original statements, bills and invoices for at least one year for purposes of inspection. This material shall be open to inspection at all times by the Department, the Attorney General and county attorneys.

4.1.1.15. EMINENT DOMAIN POLICY FOR COAL STRIP MINING (Section 70-30-106 MCA)

This 1973 law prohibits use of the state's power of eminent domain for coal mining where the holder of mineral rights is not also the surface owner. This exception exists for the following reasons: 1) the coal reserves of eastern Montana are so large that coal development is potentially more destructive to land and water and more extensive geographically than other mining; 2) in many areas in eastern Montana, mineral and surface ownership is split and the surface owner is putting the surface to productive use and "it is the public policy of this state to foster such productive use. . .and. . .to permit the mineral owner to condemn the surface owner" would deprive the surface owner of the right to use his property in a productive manner and "is also contrary to public policy as set forth in. . .(4). . .below"; 3) the magnitude of potential coal development will subject landowners to undue harassment by excessive use of eminent domain; and 4) "it is the public policy of the state to encourage and foster diversity of land ownership, and the surface mining of coal and con-

trol of large areas of land by the surface coal mining industry would not foster public policy and further the public interest."

4.1.1.16. NUCLEAR WASTES CONTROL AND STORAGE (Section 75-3-301 et seq. MCA)

The 1977 Legislature passed this law to prohibit disposal within Montana of large quantities of radioactive materials produced in other states. This act does not apply to by-product materials used or transported for educational, scientific, medical, geophysical or other purposes licensed by the U.S. Nuclear Regulatory Commission. This law became part of an existing statute that created a state radiation control agency in the Department of Health and Environmental Sciences to regulate and license sources of ionizing radiation.

4.1.2. COAL DEVELOPMENT IMPACT LEGISLATION

One important trend in energy-related statutes is to link more closely the benefits and revenues associated with energy development for the areas, persons and governmental entities experiencing the adverse impacts and costs. Montana's coal development impact legislation channels part of coal severance tax revenues to the coal impact areas of the state. (Coal severance tax funds are allocated to a number of special accounts, the general fund, and a special trust fund as outlined in Section 4.1.5.1.).

COAL DEVELOPMENT IMPACT LEGISLATION (Section 90-6-201 et seq. MCA)

This act established two special accounts for coal tax revenues to assist local governmental units facing the need to expand services due to large scale development of coal mines and coal-using energy complexes.

For the four fiscal years following July 1, 1975, all funds in the coal area highway improvement account were appropriated to the Department of Highways. The Department prepared a special program (see Table V-1 in Section 5.9.) for reconstructing highways in the eastern Montana coal field economic growth center, including Rosebud, Big Horn and Treasure counties. The Department of Highways no longer receives funding from the coal severance tax.

The Coal Board, composed of seven gubernatorial appointees and assigned to the Department of Community Affairs, is established to evaluate grant applications from local governmental units (or state agencies assisting such units) for funds with which to respond to local coal development impacts. The Board awards grants from a designated portion of coal severance tax revenues which are deposited in the local impact and education trust fund account. The Board is directed to give attention "to the need for community planning before the full impact is realized." The Department of Community Affairs is responsible for designating counties, towns, school districts and other governmental units which have had or expect to have an estimated 10 percent population increase during any three-year period since 1972 as a result of the impact of coal development. These units are to receive at least 50 percent of the funds available to the Board. The unexpended balance in the local impact and education trust funds account is invested and the resulting income is used to support the public schools, colleges, and universities. Coal Board grants are awarded on the basis of need, degree of severity of impact, availability of funds and degree of local effort in meeting the need. (In determining the degree of local effort, the Board shall consider millage rates and bonded indebtedness as they apply to each applicant.)

4.1.3. ENERGY EMERGENCY PLANNING
(Section 90-4-301 et seq. MCA)

The 1973 oil embargo and resulting domestic energy shortages and supply disruptions demonstrated the need for energy emergency planning at the state level. The 1977 Legislature enacted a new statute to address this problem.

The Legislature recognized that energy supplies are increasingly subject to shortages and supply disruptions, and that resulting energy emergencies may endanger public health and safety. This act establishes planning and information gathering mechanisms, and provides for exercise of emergency powers by the Governor in the case of an energy alert or emergency situation.

A legislative energy policy committee, consisting of the leadership of both houses, advises and consults with the Governor on all actions taken under this law. It is the Governor's responsibility to develop provisions for the allocation, conservation and consumption of energy, giving consideration to supplying vital public services during an energy supply alert or emergency. The Governor must develop procedures for obtaining energy information from producers, suppliers, consumers, and public agencies, to aid in determining the need for an energy supply alert or emergency. Energy suppliers may be required to submit curtailment plans. All plans and procedures must be coordinated with any federal or regional plans in existence. The Governor may subpoena witnesses and records if necessary to obtain the required information.

A supply alert lasts for 90 days and may be extended for 90-day periods. During an alert, the Governor may direct state and local officials and agencies to reduce energy consumption and to promote conservation and recycling, but may only request voluntary compliance by the private sector.

When conditions exist which may threaten life, health and property, the Governor may declare an energy emergency, which lasts 14 days unless extended by a joint resolution of the Legislature. During an emergency, the Governor may implement mandatory allocation, production, curtailment, and conservation programs in both the public and private sectors.

The 1979 Legislature extended the energy emergency planning statute until July 1, 1985. No changes were made in the language or requirements of the law.

4.1.4. CONSERVATION, ALTERNATIVE ENERGY SOURCES, AND RENEWABLE RESOURCES

Energy supply limitations correspond to the finite, nonrenewable nature of fossil fuels and the ever-increasing costs of large-scale energy production and distribution. The following statutes address energy conservation and renewable forms of energy.

4.1.4.1. ALTERNATIVE RENEWABLE ENERGY SOURCES GRANTS PROGRAM
(Section 90-4-101 et seq. MCA)

DNRC has been authorized since this law was enacted in 1975 to award grants to encourage research, development, and demonstration of such renewable energy sources as solar, wind, geothermal, hydro, and biofuel. These grants support projects conducted within the state that address Montana's energy needs.

Under this law DNRC is given the option of appointing an Alternative Energy Advisory Committee composed of Montana citizens with expertise in alternative energy matters. Any person may apply to DNRC for a grant to support research, development or demonstration of alternative energy systems. Grants are awarded for one year, and preference may be given to projects that have been approved for federal funding and require matching money, or to independent research centers. All information resulting from funded research is public property. DNRC reports to each legislative session on the conduct of the grants program.

Two recent changes have been made in the law. First, the 1979 Legislature expanded it to allow grants to projects promoting the commercial marketing of renewable energy sources. Second, under a bill passed by the 1977 Legislature, the grants program now receives 2.5 percent of revenues from the state coal severance tax. Before January 1, 1980, the program had received 1.875 percent.

4.1.4.2. ENERGY-RELATED TAX INCENTIVES (Section 15-32-101 et seq. MCA)

The purpose of this law is to encourage the use of alternative energy sources and the conservation of energy through incentive programs. Such incentives are to be made available to the energy user on a basis which requires him or her to take the initiative in obtaining a particular incentive. The law allows but does not require a public utility to extend credit for energy conservation investments.

Income Tax Deduction for Energy Conservation. Under this section Montana taxpayers can qualify for a maximum $1,800 state income tax deduction for energy conservation work installed in residential buildings, and a maximum deduction of $3,600 for commercial, industrial or agricultural buildings.

A state income tax deduction is subtracted from an individual's adjusted gross income before the tax is computed. The amount of savings varies according to the tax bracket.

The costs of materials and installation of an energy conservation project, minus the value of public or private grants received, are eligible for the tax deduction. The entire cost of energy conservation work done in existing structures qualifies for the deduction, but in new construction only the portion of the work that exceeds state energy conservation standards is eligible.

The following tables show the value of the tax deduction:

If the installation is made in a residential building:	**If the installation is made in a building not used as a residence:**
100% of the first $1,000 expended	100% of the first $2,000 expended
50% of the next $1,000 expended	50% of the next $2,000 expended
20% of the next $1,000 expended	20% of the next $2,000 expended
10% of the next $1,000 expended	10% of the next $2,000 expended

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The tax deduction may be taken only for the year the installation is completed and only for buildings (including mobile homes) located in Montana.

Energy conservation installations qualifying for the income tax deduction include insulation, storm doors and windows, hot-water restrictors, caulking and weatherstripping, and clock-regulated thermostats. Presently, wood stoves, fireplaces, and fireplace modifications (with the exception of glass fireplace doors) are not eligible for these tax incentives.

Income Tax Credit for Renewable Energy. Individuals who install renewable energy systems in their principal residence in Montana before December 31, 1982, can claim credits to reduce their state income taxes. They can earn credit for systems installed since December 31, 1976, if not already claimed. The maximum credit is $125: 5 percent of the first $1,000 of the cost of the system, plus 2.5 percent of the next $3,000.

Qualifying renewable energy systems use solar energy, wind, solid wastes, or the decomposition of organic wastes for energy generation. Also included are systems for generating electricity from wood wastes and hydropower from impoundments no larger than 20 acres. The 1979 Legislature made passive solar systems eligible for the income tax credit, but, only the portion of the passive system that is designed to collect, store, and distribute solar energy (additional south-facing windows or heat storage mass, for example) qualifies. A few examples of eligible renewable energy systems are geothermal space heaters, small-scale hydropower systems, windpowered electrical generators, and active or passive solar installations. The Department of Revenue will not allow tax credit for heat pumps, wood stoves, and fireplaces.

Low-Interest Loans for Renewable Energy and Energy Conservation. Public utilities and financial institutions in Montana may make low-interest loans for the installation of energy conservation materials or recognized nonfossil forms of energy generation in dwellings.

Public utilities that provide natural gas or electric service within the state may make energy conservation loans to their customers at a maximum annual interest rate of 7 percent. There is no minimum rate. They may also make renewable energy loans at an annual rate between 5 and 7 percent.

Montana financial institutions (state and federally chartered banks and trust companies, savings and loan associations, credit unions, and consumer loan companies) may also make low-interest loans. The maximum rate the institutions may charge is two percentage points below the discount rate on 90-day commercial paper, an interest rate given to preferred customers. This rate may change at irregular intervals. There is no minimum rate for the loans, and the same maximum applies to both energy conservation and renewable energy loans.

Participation in the loan program by any utility or financial institution is voluntary. Those that participate earn state tax credits to reimburse them for the costs of the program. But the amount of credit each can claim is limited, restricting the number of loans made each year.

Four public utilities in Montana have already developed low-interest energy loan programs, described in Section 9.7. All provide loans mainly for energy conservation rather than for renewable energy generation.

4.1.4.3. PROPERTY TAX EXEMPTION FOR RENEWABLE ENERGY (Section 15-6-201 MCA)

An individual or firm that installs a recognized nonfossil generating system in any kind of building in Montana after January 1, 1979, is eligible for a 10-year property tax exemption based on the value of the system. For a single family residential dwelling (including mobile homes), property taxes are exempted on up to $20,000 of the system's appraised value. Up to $100,000 of the system's value is exempt if installed in a multi-family residential dwelling or in a nonresidential structure.

The assessor in each county administers the property tax exemption, following rules adopted by the Department of Revenue Property Assessment Division.

4.1.4.4. GASOHOL LICENSE TAX REDUCTION (Section 15-70-204 MCA)

Under a new state law, gasohol (a blend of gasoline and at least 10 percent ethanol) produced in Montana from Montana-grown agricultural products will be taxed at a lower rate than standard gasoline. The 1979 Legislature established a sliding scale of fees for eligible gasohol, replacing the current 9¢/gallon tax on standard gasoline:

- beginning April 1, 1979, gasohol is taxed at 2¢/gallon
- beginning April 1, 1985, gasohol is taxed at 4¢/gallon
- beginning April 1, 1987, gasohol is taxed at 6¢/gallon

The special tax rates terminate on April 1, 1989. If the tax on standard gasoline ever falls below the gasohol scale during the time, the lower rate will apply to gasohol as well. But, if the loss of tax revenues from gasohol damages the maintenance or construction of the state or federal highway system, the Governor can suspend the lower gasohol tax rate.

Prospective gasohol distributors, before beginning operations in the state, must purchase a license and post a bond (at least $1,000) with the Department of Revenue's Motor Fuel Tax Division.

4.1.4.5. GASOHOL FACILITY PROPERTY TAX REDUCTION (Section 15-6-135 MCA)

Beginning January 1, 1980, property taxes will be reduced for any real or personal property used primarily in the production of gasohol in Montana. A law passed by the 1979 Legislature allows the tax reduction during the construction of the gasohol facility and its first three years of operation. Eligible gasohol facilities are designated as Class 5 property, which is taxed at 3 percent of its market value.

4.1.4.6. GRANTS FOR FUELS FROM WHEAT AND BARLEY (Section 80-11-221 et seq. MCA)

Montana collects a tax on all wheat and barley grown in the state and sold through commercial channels. The 1979 Legislature authorized the use of up to $200,000 of these tax revenues each year to fund a grants program promoting the use of Montana-grown wheat and barley as a fuel. A research or demonstration project (a biomass-fired generator or gasohol plant, for example) may be eligible for a grant for part or all of its cost. The project can also address the use of agricultural residues from a fuel-producing process as a food source.

The Montana Department of Agriculture administers the program, which continues through June 30, 1983.

4.1.4.7. SOLAR EASEMENTS (Section 70-17-301 et seq. MCA)

The 1979 Legislature authorized the establishment of solar easements to help protect Montanans' investments in solar energy. A solar easement, like other easements, is a legal device to allow a landowner to transfer the right to use property in certain specified ways, without transferring the actual ownership of the property. The landowner can still use the land in any way that doesn't interfere with the rights granted to the person holding the easement.

At the time of the granting of the easement, the owner of the property must agree to the action, since the solar easement is a voluntary procedure. But once granted, an easement remains in effect even if the landowner who granted it sells the property. The easement can also be granted for a specified period of time, or under specified conditions (until a planned road is developed, for example).

A solar easement must be properly filed with the local clerk and recorder's office. The written document must specify at least the legal description (boundaries) of the property, the vertical and horizontal angles at which the easement extends over the property, and any conditions under which the easement is granted or may be terminated. Besides these requirements, standard rules for documenting an easement may apply.

4.1.4.8. HOME WEATHERIZATION (Section 90-4-201 et seq. MCA)

All federal funds available to Montana intended to increase the energy efficiency of dwellings occupied by persons of low and fixed incomes, except under Title XX of the Social Security Act, are coordinated by and appropriated to the Department of Community Affairs. The Department may not use more than 5 percent of the total weatherization funds for administering the weatherization program. A fraction of the remaining money is allocated among the Governor's substate planning districts in proportion to the number of eligible households in each district. The districts must submit plans and proposed agreements to the units of local government in the district for review and comment before the agreements are approved by the Department. State and federal weatherization funds are allocated to local weatherization programs on an annual basis.

4.1.4.9. STATE BUILDING CODE (Section 50-60-201 et seq. MCA)

This statute directs the Department of Administration to adopt rules for including energy conservation standards in the state building code by March 1978. The standards have been adopted. The Department is currently using the Code for Energy Conservation in New Building Construction.

4.1.4.10. RENEWABLE RESOURCE DEVELOPMENT (Section 90-2-101 et seq. MCA)

This statute provides for taxing nonrenewable resources to support development of renewable resources to ensure preservation of the state's natural heritage and the quality of its land, air, water, fish, wildlife, and recreational opportunities. The law establishes a Renewable Resource Development Account which receives 1.25 percent of the coal severance tax.

DNRC administers the Renewable Resources Development Program (see Section 5.10.5.6.) and may recommend to the Governor that grants and loans from the renewable resource development account be made to any department, agency, board, commission, or other division of state government. Loans may be approved to any local government body along with state agencies. Grants requested at the local level must be sponsored by a division of state government. Proposals must receive legislative approval before funding is authorized. Funding may be provided for purchasing, leasing, or constructing projects for the conservation, management, utilization, development or preservation of the land, water, fish, wildlife, recreational and other renewable resources in the state; for feasibility and design studies for such projects; for plans to rehabilitate, expand, or modify existing projects; and for such other similar purposes as the Legislature may approve.

4.1.4.11. STATE SOLID WASTE MANAGEMENT (Section 75-10-101 et seq. MCA)

The purpose of this law is to encourage good management of solid waste and conservation of natural resources by promoting solid waste recycling systems for energy production purposes where

economically feasible. The act mandates the preparation of a state solid waste management plan, in which emphasis is to be placed on maximum possible recyling of solid waste resources; maximum possible use of the private sector in constructing and operating solid waste facilities; and allocating to local authorities primary management and decision responsibilities. The Department of Health and Environmental Sciences (DHES) administers the program and is directed to provide financial and technical advisory assistance to local governments and other persons in the planning, design, construction and operation of facilities and systems.

Solid waste management grants are available from DHES to local governments to help finance the planning of solid waste systems. In allocating grant funds, DHES bases its priorities on: 1) the degree of utilization of private enterprise; 2) the size of the population to be served; 3) the financial viability of the project; and 4) the severity of the environmental and health problems addressed. The grants program is discussed in Section 5.8.1.

4.1.5. ENERGY-RELATED TAXES

Montana has traditionally derived revenues from energy extraction and conversion activities through taxes such as the oil and gas producers tax, the gas and petroleum net proceeds tax, the electrical energy producers license tax, the gasoline dealers license tax, and the coal severance tax. Allocation of the revenues from the coal severance tax is a major element of the state's energy policy.

4.1.5.1. COAL SEVERANCE TAX (Section 15-35-101 et seq. MCA)

The current coal severance tax was enacted in 1975. The first section of the coal severance tax law notes that differences between coal and metals or petroleum justify different types of taxation. The purposes of the tax are: 1) to maintain severance taxes on coal production at a constant percentage of the price; 2) to stabilize the flow of tax revenue from coal production to local governments; 3) to simplify the structure of tax revenue from coal production and improve reliability of revenue projections; and 4) to establish tax categories that recognize the unique character of coal. This act repealed the coal mines license tax and deleted coal from the provisions taxing the net proceeds of mines.

The coal severance tax act established a variable tax rate depending on the heating (Btu) value of the coal mined and whether it was mined by surface or underground methods. In the following table, value means the contract sales price.

Heating Quality (Btu/pound of coal)	Surface Mining	Underground Mining
	The greater of	The greater of
Under 7,000	$0.12 or 20% of value	$0.05 or 3% of value
7,000-8,000	$0.22 or 30% of value	$0.08 or 4% of value
8,000-9,000	$0.34 or 30% of value	$0.10 or 4% of value
Over 9,000	$0.40 or 30% of value	$0.12 or 4% of value

Producers are allowed to exclude the amount paid in production taxes from the contract sales price and to exempt from the tax, the first 20,000 tons produced each year. Almost all Montana coal is surface mined and its Btu value is high enough to be taxed at a rate of 30 percent of the contract sales price at the mine.

In 1976, Montana voters approved an amendment to the constitution to create a permanent trust fund with part of the coal severance tax revenue. Since January 1, 1980, this revenue has been allocated to ten accounts as follows:

1) **50% to a permanent coal tax trust fund.** The interest from this constitutional trust fund may be appropriated by the Legislature each session, but its principal is "inviolate" unless three-quarters of the members of each house vote for its appropriation.

2) **19% to the state general fund** where it can be used to fund a variety of the state's programs.

3) **10% to the education trust fund** to support the state's public education system. Of the interest earned on this trust, 66.5% is paid into the state public school equalization program, 22.5% goes to the Board of Regents for the university system, and 10% is reinvested in the trust.

4) **8.75% to the local impact account.** The state Coal Board awards grants from these funds to local governments to assist them in providing facilities and services needed as a direct result of coal development (see Section 5.6.4.).

5) **5% to the state public school equalization aid program** which provides state aid to schools throughout the state, based on financial need and student enrollment.

6) **2.5% to the alternative energy research development and demonstration account.** DNRC awards grants from this account to citizens, businesses, and government units for research, development, and demonstration of alternative energy sources (see Section 5.10.2.4.1.).

7) **2.5% to a parks acquisition and cultural projects trust fund.** One-third of the interest from this trust may be appropriated by the Legislature to protect works of art in the state capitol and for other cultural projects. The other two-thirds may be appropriated for the acquisition, operation, and maintenance of state parks, recreation areas, monuments, and historic sites.

8) **1.25% to the renewable resource development account** for loans and grants to government units for projects that will develop Montana's renewable resources (see Section 5.10.5.6.).

9) **0.5% to the State Library Commission**, to provide basic library services to all counties and to pay participation costs in information networks. The Commission is currently passing these funds on to the state's six library federations to fund resource sharing, particularly interlibrary loan services.

10) **0.5% to counties for land planning projects.** Montana's 56 counties have used these funds for a variety of projects: sanitation planning, mapping, subdivision review, and housing studies.

Before 1980, two additional accounts received some of the severance tax revenue:

1) **1.5% to the counties in which coal was mined** for use in their government functions.

2) **9.75% to a coal area highway improvement account** for use in repairing and improving highways in the coal impact area (see Section 5.9.1.).

Coal production and tax collections have increased steadily in recent years as shown in Table IV-1. The distribution of severance tax revenues is listed in Table IV-2.

Recent Congressional attempts to limit state severance taxes, and current litigation challenging Montana's coal tax, are discussed in Section 10.2.

TABLE IV-1
COAL LICENSE AND SEVERANCE TAX COLLECTIONS ON THE PRODUCTION OF COAL, 1971 TO 1980

Fiscal Year	Coal Tax Collections	Net Taxable Tons
1971	$ 211,788	4,686,582
1972	$ 483,188	7,102,076
1973	$ 694,056	8,883,735
1974	$ 3,315,243	11,054,323
1975	$ 5,204,798	15,894,091
	Coal Severance Tax Enacted	
1976	$ 22,924,120	22,695,668
1977	$ 34,469,814	27,068,237
1978	$ 33,623,864	26,294,212
1979	$ 42,048,719	26,290,201
1980	$ 74,252,636	34,359,911
1981 estimated	$ 84,982,530	34,510,000
1982 estimated	$ 94,036,740	34,070,000
1983 estimated	$106,460,700	34,910,000

SOURCE: Office of Budget and Program Planning, September 1980.

TABLE IV-2
COAL TAX DISTRIBUTION
Fiscal Years 1978, 1979 & 1980

Accounting Entity	Fiscal Year 1978	Fiscal Year 1979	Fiscal Year 1980	Total
General Fund	$11,241,569.87	$12,806,716.43	$20,222,499.49	$ 44,270,785.79
Acquisition, Sites & Areas	351,299.06	400,209.89	171,798.82	923,307.77
State Equalization Aid to Public Schools	2,810,392.46	3,201,679.11	5,210,070.36	11,222,141.93
County Land Planning Acct.	281,039.24	320,167.91	521,007.03	1,122,214.18
Local Impact	4,798,524.69	5,399,195.20	9,030,161.90	19,227,881.79
Coal Area Highway Improvement	3,374,513.88	4,162,182.82	1,786,707.72	9,323,404.42
State Library	-0-	-0-	383,567.98	383,567.98
Alternative Energy Research Development & Demonstration Account	702,598.12	800,419.77	1,514,667.27	3,017,685.16
Renewable Resources Bond	702,598.12	800,419.77	1,302,517.57	2,805,535.46
Parks Acquisition	351,299.06	400,209.89	2,089,638.72	2,841,147.67
Education Trust Fund	2,742,014.10	3,085,254.41	8,995,772.32	14,823,040.83
Permanent Trust Fund	6,268,015.83	10,672,263.67	23,024,226.34	39,964,505.84
TOTALS	$33,623,864.43	$42,048,718.87	$74,252,635.52	$149,925,218.82

SOURCE: Department of Revenue, June 1980.

4.1.5.2. RESOURCE INDEMNITY TRUST TAX (Section 15-38-101 et seq. MCA)

The law establishing the resource indemnity trust account states that "it is the policy of this state to provide security against loss or damage of our environment from the extraction of nonrenewable natural resources."

The Department of Revenue administers the trust account which is part of the trust and legacy fund. An annual tax of $25, plus one-half of 1 percent of the amount of the gross value of the product in excess of $5,000, is levied on mining operations in the state. All nonrenewable merchantable minerals extracted from the surface or subsurface of Montana land are taxed.

Until the account reached $10 million, all net earnings were added to it. Now that the account exceeds $10 million, only net earnings may be appropriated until the account reaches $100 million. After $100 million the Legislature may appropriate all net earnings and all receipts, but the balance may never fall below $100 million. The Board of Investments has discretion to invest all money paid into the account. The funds may be put to any use that will "improve the total environment and rectify damage" to it. As of June 30, 1980, this account contained $16,193,571, with income totaling $1,243,396.

4.1.5.3. GASOLINE DEALERS AND DISTRIBUTORS LICENSE TAX AND SPECIAL FUEL TAX (Section 15-70-101 et seq. MCA)

A tax of 11¢ per gallon is levied on the sale of all diesel fuel, and 9¢ per gallon is levied on the sale of gasoline. Revenue from these taxes is earmarked for the Department of Highways for road construction and maintenance. A small allocation goes to the Department of Fish, Wildlife and Parks for developing snowmobile trails and recreation sites, many of which are located on waterways and thereby enhance boating recreation. Fuel distributors must be licensed by the Department of Revenue and submit regular reports for sales to the Department. The gasoline tax, collected by distributors and included in the sales price, is turned over to the Department, which then allocates the funds. The special fuels (diesel) tax is paid directly by the consumer. A special fuel user may apply to the Department of Revenue for credit for taxes paid on fuels exported for use outside the state or which were not used to propel vehicles on public highways. The amount is first credited on any amounts then due and payable from the user and any remaining credit is to be paid directly to the user by the state treasurer.

4.1.5.4. OIL AND GAS SEVERANCE TAX (Section 15-36-101 et seq. MCA)

Every person producing or extracting oil or natural gas must pay a severance tax on the total gross value of marketable oil or gas produced. Oil is taxed at 2.1 percent of the first $6,000 produced from each lease, and 2.65 percent of the gross value of the production in excess of that amount. Natural gas is taxed at 2.65 percent of the gross value of production. To encourage new production, gas wells begun before 1981 are entitled to a three-year exemption from half this tax, but only if the gas produced will be distributed by a system serving a majority of Montana consumers or at least 10,000 customers in Montana.

4.1.5.5. ELECTRIC ENERGY PRODUCERS' LICENSE TAX (Section 15-51-101 et seq. MCA)

This tax applies to anyone engaged in producing electricity for sale, exchange or barter. The tax is levied on the basis of $.0002 per net kilowatt hour produced in Montana. Federal generation is exempt. The revenue derived from the tax is allocated to the general fund.

4.1.5.6. NATURAL GAS AND PETROLEUM NET PROCEEDS TAX (Section 15-23-601 et seq. MCA)

Each person engaged in producing oil and natural gas must file an annual statement with the Department of Revenue stating the income derived from each well. Net proceeds are calculated by subtracting certain deductions from the gross income of the well. Allowable deductions include royalties and costs of production, including reclamation. The resulting figure is transmitted to the county assessor of the county in which the well is located and subject to levies like any other property in the county.

4.1.5.7. COAL GROSS PROCEEDS TAX (Section 15-23-701 et seq. MCA)

Each person engaged in mining coal must annually file with the Department of Revenue a statement of the gross yield from each coal mine as derived from the contract sales price. The Department transmits the statement or information of the gross proceeds to the county assessor of each county in which the coal mines are situated. The gross proceeds becomes part of the property tax base and subject to levies like any other property in the county.

4.1.6. 1979 MONTANA LEGISLATURE ENERGY-RELATED RESOLUTIONS

The 1979 Montana Legislature passed a number of joint resolutions dealing with important energy-related issues:

1) HJR 8 recommending that the Public Service Commission adopt the voluntary standards of the President's Council on Wage and Price Stability in approving utility rate increases.

2) SJR 8 urging completion of the reregulating dam on the Kootenai River.

3) HJR 12 urging that the Northern Tier Pipeline be approved by relevant state and federal jurisdictions.

4) HJR 17 urging the Committee on Priorities to assign a joint committee to conduct an interim study of the need for energy forecasting in the state by an agency or agencies of the state of Montana.

5) SJR 28 requesting DNRC to involve Montana citizens in research, development, and demonstration of fuels manufactured from agricultural products and residues.

6) HJR 37 outlining to the U.S. Congress and the legislatures of Washington, Oregon and Idaho the Legislature's position with regard to the Pacific Northwest Electric Power Planning and Conservation Act.

4.2. FEDERAL ENERGY LEGISLATION

The energy legislation summarized in this section was introduced in Congress in the 1979-1980 sessions. Some of the bills were not enacted but are expected to be reintroduced in 1981.

4.2.1. EMERGENCY ENERGY CONSERVATION ACT OF 1979

In response to the petroleum fuel shortages in 1979, Congress enacted the Emergency Energy Conservation Act to authorize the President to declare national energy emergencies and to establish conservation targets for specific fuels for individual states. The law also requires the President to develop a gasoline rationing plan for Congressional review and establishes criteria under which the President may implement the plan subject to Congressional veto.

To impose the conservation targets, or goals, the President must find that a severe interruption in energy supply exists or is imminent or that domestic energy demand must be restrained in order to meet U.S. obligations under the international energy agreement.

The states may develop their own conservation plans for meeting designated targets (see Section 5.10.2.3.3.); however, the legislation provides that a standby federal emergency conservation plan may be imposed if a state does not develop its own plan or if its plan fails to meet the designated targets.

A federal standby gasoline rationing plan was approved by Congress in July 1980. Based on a system of motor vehicle registration, ration checks will be sent to vehicle owners every three months. The ration checks will be exchanged for ration coupons at banks and other coupon distribution points. When gasoline is purchased the customer will present coupons for the desired amount and pay for the gasoline purchased. Under the plan, special consideration will be given to priority uses of fuel such as for emergency services, agricultural production, public transportation, and energy production.

The rationing plan will require considerable preliminary work—printing ration checks and coupons and establishing a national vehicle registration file—to bring the plan to a state of readiness. Rationing would be implemented, however, if a 20 percent shortfall in petroleum supplies exists or is likely to exist for at least 30 days, unless the President obtains a Congressional waiver of this restriction.

A separate rationing plan for diesel fuel will similarly be developed as required by the Emergency Energy Conservation Act.

4.2.2. CRUDE OIL WINDFALL PROFITS TAX ACT OF 1980

Like the Energy Security Act (Section 4.2.3.) and the proposed Energy Mobilization Board (Section 10.9.), the Crude Oil Windfall Profits Tax Act is a manifestation of the national policy of reducing U.S. dependence on foreign oil. The three-pronged import reduction program, termed the "moral equivalent of war," involves decontrolling domestic oil prices to stimulate production and provide economic incentive for reducing the nation's petroleum consumption, imposing a stiff tax on the enormous oil company profits that decontrol will produce, and using the tax to underwrite a crash program to develop new domestic energy resources.

Through federal regulations due to expire in October 1981, the price of U.S. produced crude oil has been kept below the world market price since the 1973-74 Arab oil embargo. Lifting the controls will allow domestic prices to rise to the world oil price and, though it will encourage conservation, the resulting increased price of petroleum products is expected to cost U.S. consumers $1 trillion and increase oil company profits by over $442 billion through 1990.

The Crude Oil Windfall Profits Tax Act of 1980 is an attempt to mitigate the impact of decontrol by collecting approximately half the expected windfall revenues, $227.7 billion, through a temporary excise tax on crude oil price increases above 1979 levels.

Sixty percent of the proceeds from the tax, or $137 billion, is earmarked for income tax reduction, although specific legislation is needed before any tax cut can be enacted. Another 25 percent, or $57 billion, will provide revenues to help low-income families meet rising energy costs. The remaining $34 billion will be used to develop new energy sources and improve the nation's transportation system.

Depending on how fast prices and, hence, tax revenues rise, the tax will begin phasing out no sooner than 1988 and no later than 1991.

4.2.3. ENERGY SECURITY ACT OF 1980

The 1980 Energy Security Act is an omnibus bill containing eight titles authorizing a number of alternative energy supply and conservation programs.

Title I — Synthetic Fuels. Foremost among these programs is Title I of the act, which creates the Synthetic Fuels Corporation, an independent federal entity charged with administering as much as $88 billion in financial incentives for commercial synthetic fuel projects. Because a domestic commercial synthetic fuels industry would have significant repercussions for Montana, the Synthetic Fuels Corporation is discussed in detail in Section 10.5.

To gain the support of legislators who were not enthusiastic about synthetic fuels development alone, a variety of other energy programs were added to the Energy Security Act. As provided in the law, these programs include:

Title II — Biomass Energy and Alcohol Fuels. A major alcohol and biomass fuels planning and development program is authorized in this section with $1.45 billion in appropriations to the Department of Energy (DOE) and Department of Agriculture in fiscal years 1981 and 1982. The goal of the program will be to achieve alcohol fuels production of not less than 10 percent of 1990 gasoline consumption through loans, loan guarantees, and price supports for fuels from municipal waste, forestry and agricultural products.

Title III — Energy Targets. The Act coordinates Congressional and Executive energy policy by requiring an annual Presidential report to Congress. In this report short-term and long-term energy targets for net imports, domestic production and consumption would be established and related to the annual DOE authorization.

Title IV — Renewable Energy Initiatives. Titled the Renewable Energy Resources Act, this section requires DOE to coordinate its solar and conservation information dissemination programs, accelerates the federal buildings energy conservation program and use of photovoltaic systems in federal facilities, and expands the definition of small-scale hydropower projects from a maximum capacity of 15 megawatts to a maximum capacity of 30 megawatts for loan guarantees under the Public Utility Regulatory Policies Act (PURPA). The law also provides $10 million in funding for a three-year pilot program to demonstrate energy self-sufficiency through renewable sources in one or more states.

Title V — Solar Energy and Energy Conservation. A Solar Energy and Conservation Bank will be established in the Department of Housing and Urban Development until 1987 to subsidize low-interest or reduced-principal loans to financial institutions for solar and conservation improvements. Eligibility for the subsidized loans is based on the borrower's income and the type of structure to be improved.

This section also authorizes a state-run federal grant program to provide matching funds to low-income people for residential energy conservation improvements. Other provisions facilitate utility financing of residential energy conservation measures, establish a utility energy audit demonstration program, provide funding for training energy auditors, modify the low-income weatherization assistance program, and expand research and development of industrial conservation projects.

Title VI — Geothermal Energy. A geothermal reservoir confirmation loan program will be established under this title to grant low-interest forgivable loans for exploring geothermal reservoirs. Additional funding is authorized for feasibility studies of geothermal development for nonelectric use.

Title VII — Acid Precipitation Program and Carbon Dioxide Study. An interagency task force will conduct a 10-year comprehensive research program on the causes and effects of acid rain. A second part of the title provides for an inclusive study of the effect of fossil fuels on the level of carbon dioxide in the atmosphere. The study will include an assessment of the economic, physical, climatic, and social effects of increases in carbon dioxide levels.

Title VIII — Strategic Petroleum Reserve. This section orders the administration to resume filling the Strategic Petroleum Reserve at a rate of at least 100,000 barrels per day.

4.2.4. COAL SLURRY LEGISLATION

For the third time in six years, Congress considered legislation to facilitate construction of coal slurry pipelines. The legislation, which would give pipelines eminent domain authority to cross railroad rights-of-way, is a primary goal of the slurry industry since the railroads are effectively blocking many key pipeline routes.

Though several versions of coal slurry legislation were presented in the 1979-80 Congress, strong opposition from the railroad industry, fearful of losing freight revenues, and from environmental groups and western politicians, concerned about pipeline water requirements, kept the bills from moving through Congress. Still unresolved at the time Congress recessed in October were the issues of which entities should have the authority to grant pipeline certificates, whether pipelines should be given the power of eminent domain on most nonfederal land or only on railroad rights-of-way, and agreement on language to protect western water rights.

Since construction of coal slurry pipelines is stalled until Congress intervenes, legislative debate will probably continue until the issues are resolved. See Section 10.3 for a discussion of how Montana may be affected by coal slurry pipelines.

4.2.5. ENERGY MANAGEMENT PARTNERSHIP ACT

The proposed Energy Management Partnership Act (EMPA) has been pending before Congress for the last couple of years. The Senate version of the EMPA bill passed in July 1980, but the House failed to take action on a similar bill before its October recess. Even if the House approves the bill after the recess, a conference committee will be necessary to iron out the differences between the House and Senate versions — work that will probably not be completed before Congress adjourns. An overview of the main provisions of this legislation is warranted since it is likely to be reintroduced in the next Congress and, if enacted, would substantially affect state energy programs.

The Energy Management Partnership Act is a high-priority bill for most governors and state energy directors. It would provide funding for states to consolidate and expand their energy planning efforts and give special emphasis to conservation and renewable resource programs. Specifically, the legislation would consolidate existing state conservation grant programs now operated under the Energy Policy Conservation Act, the Energy Conservation and Production Act, and the Energy Extension Service. It would also create a new local government program to plan and implement community conservation programs and authorize substantial financial assistance to the states for their energy programs.

4.2.6. ENERGY IMPACT ASSISTANCE LEGISLATION

Another bill that passed the Senate but failed to reach a floor vote in the House before the October Congressional recess was legislation that would provide financial assistance to communities affected by energy development.

As passed by the Senate, the Energy Impact Assistance Act expands the scope and funding level of the existing Farmers Home Administration 601 program. Financial assistance would be provided to states, Indian tribes, and local governments for housing, public services and facilities in energy "boom towns."

Under the present FmHA 601 program (see Section 5.6.5.) only those areas experiencing or anticipating coal or uranium development are eligible for assistance. The proposed legislation would expand the array of energy development activities (e.g., synfuel projects, minemouth plants) that would render an area eligible for impact assistance. The governor would continue to be responsible for designating eligible areas, and local growth management and mitigation planning would continue to be a prerequisite for grants or loans.

In related action, the General Accounting Office (GAO) has undertaken a new study of the need for federal impact assistance as a result of major energy development activity. GAO is looking at the existing piecemeal federal legislation, as well as at states' abilities to provide assistance, in the context of existing and anticipated needs.

4.2.7. COAL SEVERANCE TAX LEGISLATION

Legislation to limit states' authority to establish coal severance taxes was introduced in the 96th Congress in proposed amendments to the Power Plant and Industrial Fuel Use Act of 1970. Because Montana's tax (see Section 4.1.5.1.) is a specific target of the Congressional drive to restrict states to a 12.5 percent maximum tax, a detailed discussion of the coal severance tax challenge is presented in Section 10.2.

Though the proposed legislation was approved by the House Interstate and Foreign Commerce Committee in September 1980, western congressmen succeeded in reassigning the controversial bill to the House Interior Committee. With only a few weeks remaining before adjournment, this action successfully buried the bill for the 1980 legislative session. But the issue of a state's right to tax its energy resources is not dead, and this bill or a similar proposal is likely to reappear for consideration by the 1981 Congress.

4.2.8. PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

This legislation proposes a comprehensive power planning strategy for the Pacific Northwest. A bill introduced by Senator Henry Jackson of Washington passed the Senate in July 1979, and the House passed their version of the bill in November 1980. The Senate made no changes in the House version, and the President signed the bill into law on December 5, 1980. This legislation is summarized in Section 10.8.

4.2.9. ENERGY MOBILIZATION BOARD

A proposal to create an Energy Mobilization Board designed to speed construction of high-priority energy projects was introduced in Congress in 1979. This bill is of major concern to Montana and other western states and even though it failed to pass this year, it will probably be reintroduced in 1981. The proposed legislation is discussed in Section 10.9.

MONTANA STATE GOVERNMENT

This section summarizes the state government programs that administer Montana's energy policies and statutes.

5.1. GOVERNOR'S OFFICE

The Governor is ultimately responsible for implementing the laws of Montana, directing all executive branch actions, and recommending policy to the Legislature for its consideration. Specifically, the Governor has contributed to Montana's energy policy in the following ways:

—Established an energy conservation program for state government by promoting fuel efficiency education programs for all state government personnel, participating in Energy Forums across the state to explain Montana's energy supply situation and encourage public participation in conservation programs, and supporting the 55 mph speed limit as part of the government's overall program to conserve fuel.

—Defended Montana's coal severance tax by recommending a $500,000 appropriation for a special fund to finance the state's legal defense of the tax.

—Directed Montana's DNRC to file an **amicus curiae** brief in support of a lawsuit against the Bonneville Power Administration. The object is to set a precedent for enforcing state siting laws with regard to electric transmission lines (see Section 7.1.3.3.).

—Worked for lower natural gas prices by negotiating with the Canadian government for a discount in the price of natural gas crossing the border into Montana.

The Governor has also worked to influence federal energy policies by participatng in the Western Governors' Policy Office affirmative action plan (see Section 6.1.) and by opposing legislation that would have allowed the federal government to preempt state and local resource management laws.

Under a statute passed by the Montana Legislature in 1977, the Governor must develop provisions for allocating, conserving, and consuming energy during an energy supply alert or emergency (see Section 4.1.3.). The Governor is authorized under this law to develop and implement emergency energy rules for the state. These rules were drafted by DNRC and adopted in October 1980 (see Section 5.10.2.3.3.).

5.2. LIEUTENANT GOVERNOR'S OFFICE

The Governor has assigned the Lieutenant Governor responsibility for developing Montana's energy policy and coordinating activities of the executive departments concerned with energy and natural resource-related matters.

In 1979-80 the Lieutenant Governor's office was involved in several energy-related issues of particular importance to Montana, including the U.S. Department of Interior's coal leasing program (see Section 7.2.2.1.) and the U.S. Department of Energy's forecasts of regional coal production (see Section 7.1.2.). The Lieutenant Governor has also closely monitored proposed federal legislation dealing with regional energy planning in the Pacific Northwest (see Section 10.8.), emphasizing Montana's position and participation.

The Lieutenant Governor has represented Montana in proceedings concerning proposed Canadian energy developments near Montana's border. These include the Cabin Creek development in British Columbia and the Poplar River development in Saskatchewan.

5.2.1. POPLAR RIVER ELECTRIC GENERATING COMPLEX

In 1974 the Saskatchewan Power Corporation (SPC), owned by the citizens of Saskatchewan, proposed to establish a four-unit, 1,200 megawatt thermal electric generating complex, including a reservoir with 33,000 acre-feet of storage capacity on the East Poplar River and a new lignite coal mine near Coronach, Saskatchewan, just north of the international boundary. This complex will affect air quality and water quantity and quality in northeastern Montana.

The water quantity issue has received primary attention to date. The International Joint Commission (IJC) issued a water apportionment report for the Poplar River Basin in April 1978. The IJC recommended that the aggregate natural flow of waters in the basin which cross the international boundary be apportioned equally between the United States and Canada. Montana supports the recommended apportionment on the condition that any agreement on this issue will not preclude future negotiations to resolve water quality issues. In 1977 the IJC established the International Poplar River Water Quality Board and charged it with the task of determining the water quality impacts of the proposed development. The Board's report, which was released in July 1979, concluded that total dissolved solids (TDS) and boron are the parameters most likely to be increased by the SPC plant at Coronach, and to result in transboundary effects on crops in Montana. A formal water apportionment agreement has been postponed until the IJC decides to accept or reject the findings of the report.

Air quality matters are outside the jurisdiction of existing treaties and agreements, but the two governments have agreed to discuss this topic within a proposed bilateral monitoring agreement originally suggested in August 1979. Representatives of the governments of Canada, the U.S., Saskatchewan and Montana met in March 1980 to discuss the establishment of a binational committee to monitor air and water quality in the Poplar River Basin. Final agreement on U.S. and Canadian proposals for a monitoring program is expected approximately one month ahead of the first unit's scheduled startup, now planned for late 1980. Current plans also call for a second 300 megawatt unit to begin operating in 1982. The state of Montana has questioned whether it is appropriate for the government of Saskatchewan to construct an additional generating unit before the IJC has completed its review of the proposed project's transboundary impacts.

In response to requests by the U.S. State Department and the Environmental Protection Agen-

cy (EPA), and after consultation with Montana's congressional delegation, the EPA prepared an environmental impact statement (EIS) on the impact of Canadian power plant development and flow apportionment in the Poplar River Basin. The draft EIS was completed in July 1980 and public hearings were held in September 1980.

The relative importance of irrigation in the Poplar River Basin became an issue early in these international proceedings. Apart from predicted air quality impacts, the operation of the plant and its ancillary facilities near Coronach will almost certainly affect irrigation more than any other use. In commenting on the Poplar River draft EIS, the state recommended more extensive water quality monitoring at all boundary stations during the period of runoff, with objectives aimed at protecting against elevated TDS and boron concentrations.

The state of Montana has long been concerned about the impact of the proposed Canadian electric generating complex. The 1977 Legislature passed a resolution urging the federal government to negotiate a treaty with Canada to address air pollution near the international boundary. A second resolution established a state policy that the plants should not violate federal or state pollution standards, that the Saskatchewan government should install control technology on the plants, and that transboundary impact matters should be referred to the IJC. SB 393, also passed in 1977, amended Montana's air and water pollution laws to allow enforcement against violations by Canadian residents and others not residing in Montana.

5.2.2. CABIN CREEK COAL DEVELOPMENT

Cabin Creek, a tributary of the North Fork of the Flathead River, is the site of a proposed coal mine in southeastern British Columbia, eight miles north of the Montana border. Sage Creek, Ltd., a joint venture of Rio Algom Mines, Ltd. and Pan Ocean Oil, Ltd. of Calgary, first proposed a mining complex in 1975, but withdrew its application for a mining permit in July 1980. Substantial mine plan alterations and a need for more detailed environmental and socioeconomic information were the reasons given for withdrawing the permit request. Plans now call for resubmitting the permit application in 1981.

The coal is located in five 80-foot seams containing an estimated 60 million tons. The deposit is low sulfur, has a relatively high Btu content, and is predominantly high-grade metallurgical coal of the type used in steel and other metal smelting operations. Current mine plans may be altered, however, to emphasize production of "thermal" coal, which could be used to fuel power plants. This would allow more coal to be recovered from the mine since lower-grade and waste coal not suitable for metallurgical purposes could be sold as fuel-grade coal.

The company has abandoned plans for rail lines and a new townsite just across the border. Currently it plans to transport the coal by truck over existing forestry roads (68 km) to a coal load-out facility at Morrissey, B.C., on the Elk River, where it would be loaded on trains. The coal is currently destined for Japanese markets and extensive development will depend on improved market conditions in Japan. The proposed production rate of 1.7 million tons per year would require a labor force of approximately 450 persons who would live in Fernie, B.C., and commute to the mine site daily. Current plans also include recycling all mine water.

The state of Montana has been monitoring the Cabin Creek project since its inception and has been involved in extensive discussions with the Canadian government, the IJC and the U.S. State Department to ensure that the quality of North Fork water is preserved. The 1975 Legislature directed DNRC to conduct a study of the upper portion of the Flathead River drainage and northern portion of Flathead Lake, and to evaluate, as a function of time and location, the probable impact of development of the Cabin Creek coal deposits and attendant urbanization of the headwaters region. The study, titled "Upper Flathead River Basin Study," was published in January 1977.

In 1977 Congress authorized $2.9 million, to be administered by the EPA, for a five-year Flathead River Basin environmental impact study to assess the impact of accelerating resource development on the Flathead River Basin. The Flathead River Basin Study, now near its midpoint, is gathering air and water quality and fish and wildlife information in anticipation of the mine and potential oil and gas developments. The study is intended to head off in-

ternational disputes that could arise if pollution from the projects threatens Glacier National Park or other parts of western Montana.

Although regional impact studies have been undertaken for other areas, the Flathead Study is the only one directed by a committee composed of local, state and federal officials, private citizens, environmental groups and industry representatives. This steering committee is directly responsible for managing the study. It has undertaken a number of studies to develop a solid baseline of existing land, water, air and social conditions and to predict how various types of development would affect the Flathead Basin.

In August 1980, an American-Canadian conference on development affecting the North Fork of the Flathead River was held in Cranbrook, B.C. Emphasis of the conference was on Cabin Creek, though oil and gas development, timber harvesting, and recreation were also discussed. The conference cleared the way for future international cooperation in protecting the Flathead River Basin.

5.3. THE MONTANA LEGISLATURE

The Montana Legislature is composed of a 50-member Senate and a 100-member House of Representatives. It meets every odd-numbered year for 90 days. Legislative offices that conducted energy-related activities or programs in 1979-80 are described in the following subsections, along with three legislative committees that also dealt with energy-related issues.

5.3.1. COAL TAX OVERSIGHT SUBCOMMITTEE

The Coal Tax Oversight Subcommittee was established by Senate Bill 347 in 1979. It replaced the original Coal Tax Oversight Committee created by the 1975 Legislature and currently functions as a subcommittee of the Revenue Oversight Committee. The Subcommittee consists of four legislators—two House members and two Senate members—who are not Revenue Oversight Committee members. It is authorized to review programs financed by coal severance tax funds (see Section 4.1.5.1.). DNRC and the Montana Coal Board are among the agencies that administer coal tax funded programs.

The Coal Tax Oversight Subcommittee has also monitored the court challenge to Montana's coal severance tax (see Section 10.2.).

5.3.2. INTERIM STUDY COMMITTEE ON ENERGY FORECASTING

The 1979 Legislature passed HJR 17 establishing an Interim Study Committee on Energy Forecasting. The Committee was asked to study the adequacy of existing energy load forecasts and the desirability of developing a state energy load forecasting capability. HJR 17 also mandated the Committee to evaluate the provisions of the National Energy Act relating to energy forecasting in order to coordinate federal and state requirements and to take advantage of any funds that may be available through the National Energy Act. The Forecasting Committee was also asked to evaluate the methodology of conducting an independent forecast, the potential cost of and funding sources for a forecasting program, and the capabilities of various state agencies that might conduct the forecast.

The Energy Forecasting Committee has held hearings and received testimony on the sufficiency of existing electric load forecasts, and the costs and benefits to the state of developing an independent electric load forecasting ability and a petroleum supply system analytical capability. The Committee will report its findings and recommendations to the 1981 Legislature.

5.3.3. ENERGY POLICY COMMITTEE

The 1977 Montana Legislature passed House Bill 762, which assigns to the Governor emergency powers in case of an energy alert or emergency. The 1979 Legislature extended the statute until July 1, 1985. For a full description of the energy emergency statute, see Section 4.1.3.

A legislative Energy Policy Committee, consisting of the leadership of both houses, advises and consults with the Governor on all actions taken under this law. The Committee met in 1977 to advise the Governor of possible curtailment measures to be taken during the drought, and again in 1979 to advise on the summer diesel fuel shortage in Montana.

5.3.4. ENVIRONMENTAL QUALITY COUNCIL

The Environmental Quality Council (EQC) was established pursuant to the Montana Environmental Policy Act in 1971. The Council is a legislative service and research agency responsible for natural resource and environmental management issues, including energy. In order to answer legislators' questions, EQC has established a list of experts in natural resources and environmental concerns. When a legislator submits a request to EQC, staff members research the subject with the relevant experts, accumulate the answers, summarize and return the information to the legislator.

EQC publishes the **Montana Environmental Index** which summarizes all statutes dealing with environmental and natural resource issues, including appropriate energy-related matters.

At the request of the 1979 Legislature, EQC is studying the laws relating to review procedures for permits required for projects involving the state's natural resources. EQC is preparing recommendations for coordinating permit procedures for the benefit of the applicant, the reviewing agencies, and the public. EQC's findings and recommendations will be submitted to the 1981 Legislature.

5.3.5. MONTANA CONSUMER COUNSEL

The Montana Consumer Counsel exists pursuant to Article XIII, Section 2 of the Montana Constitution, which provides for an office of Consumer Counsel to represent consumer interests in hearings before the Public Service Commission. The Consumer Counsel's office analyzes rate-increase requests from utilities to determine whether the increase is justified. If it determines that the increase is not justified, it intervenes in the case and, if necessary, hires consultants to make recommendations in the form of prepared testimony and to sponsor that testimony during the rate hearing before the Public Service Commission. This process has resulted in various innovations used by the Commission in establishing rates throughout the state.

For example, the Consumer Counsel sponsored the witness who initially recommended that the declining block rate structure, based solely on cost of service, be eliminated and replaced by a volumetric structure, which charges the same for each unit of energy consumed, regardless of the customer's total usage. This innovation takes into account the scarcity of conventional sources of energy and encourages conservation of those resources. Volumetric rate structures now appear to be favored by the Public Service Commission.

Another example has to do with the increased demand for coal by utilities building coal-fired generating facilities. Many of these utilities have formed subsidiary companies to acquire and mine coal and sell it back to the parent company. The danger is that the utility will reap excessive profits through its subsidiary by overcharging the parent utility for the coal. The parent utility could then pass the expense along to the consumer as a cost of doing business, and reap a large profit from its investment in its subsidiary. The Consumer Counsel persuaded the Public Service Commission that an adjustment was necessary to compensate for such overcharging on the part of Montana-Dakota Utilities.

5.4. DEPARTMENT OF ADMINISTRATION

The Department of Administration operates two programs that deal significantly with energy conservation.

The Building Codes Division is now enforcing the Code of Energy Conservation In New Building Construction. Use of the energy code is mandated for all municipalities and counties enforcing the building code. In counties the code applies to residential buildings classified as duplexes and above and all other buildings open to the public. In municipalities, the energy code applies to all buildings, including single-family dwellings.

The Building Codes Division and DNRC's Energy Division have sponsored several seminars for local code officials to prepare them to enforce the energy code.

The Purchasing Division is currently developing procedures to identify and implement techniques to ensure that more energy-efficient products are purchased in state government. The Purchasing Division is responsible for procuring $45 million worth of products, materials and services annually for the state's departments, institutions and post-secondary schools.

Energy conservation is accomplished in the procurement function by a bid award process in which the life-time energy cost of a product and its price are combined to determine which competing model delivers the required service at the lowest cost. This award process, known as Life Cycle Cost Analysis, is in current use for purchasing automobiles, trucks, dishwashers, washing machines and air conditioners.

Future conservation projects for the Purchasing Division include an education program for state departments, institutions and schools on the energy and cost saving possibilities of lighting with new, more efficient lamps.

Both the Building Codes Division and the Purchasing Division receive federal energy conservation funds through the Energy Division of DNRC to support these programs.

5.5 DEPARTMENT OF AGRICULTURE

The 1979 Legislature passed Senate Bill 520 amending the Wheat Research and Marketing Law (Section 80-11-221, MCA) and authorizing the Department of Agriculture to contract for research and development of food and fuels derived from wheat and barley. This program is expected to enhance markets for Montana grain as well as to encourage development of an alternate source of fuel. Senate Bill 520 provides $200,000 each year through 1983, from the growers' self-imposed annual assessment on wheat and barley. The Wheat Research and Marketing Committee sets the amount of assessment to fund the program.

The Department of Agriculture is currently contracting with both private and government organizations under the new law. This includes agreements with DNRC to fund grants under a similar program (see Section 5.10.2.4.1.). Among the projects approved for funding is a proposal from Brelsford Engineering in Bozeman to develop a small-scale continuous fermentation process that could cut fermentation time from 48 hours to 4 hours. Also funded was a feasibility study by Lang Farms in Miles City for a new process that will produce from 1.5 to 4 million gallons of fuel per year from barley or wheat. The Lake County Resource Recycling Company will conduct a feasibility study on using barley and potatoes as a feed stock for alcohol fuel. This project is partially funded by DNRC. Special research funds were also granted to Montana State University for a waxy barley project.

The largest production plant funded to date is being constructed by Ag/NRG, Inc., of Great Falls. The plant will produce between 300,000 and 483,000 gallons of ethanol per year.

5.6. DEPARTMENT OF COMMUNITY AFFAIRS

Energy-related functions of the Department of Community Affairs (DCA) are administered by several agencies or divisions within the department, including the Montana Coal Board, the Community Development Division, the Community Services Division, and the Highway Traffic Safety Division.

5.6.1. HOME WEATHERIZATION PROGRAM

This program is administered by the Community Services Division and delivered through the local Human Resource Development Councils (HRDC's) for the purpose of increasing the energy efficiency of dwellings occupied by low-income persons. Fuel savings estimated at up to 50 percent of household fuel costs can be realized by improving caulking around windows and doors, installing storm windows and doors, insulating walls and attics, and weatherstripping and repairing broken windows. Sinch 1975, about 10,000 homes of low income, handicapped or elderly persons have been weatherized. The attendant energy savings continue to be realized for as long as the homes exist, increasing in value as energy prices rise over time.

Program eligibility is determined by income status and guidelines established by the federal Office of Management and Budget. Owner- and renter-occupied homes are eligible for weatherization assistance through the program. Applications for assistance must be submitted to local HRDC offices. An advisory committee, composed of low-income people and people knowledgeable about home heating and construction, establishes program policies and procedures.

The federal Department of Energy has approved funding for this program at approximately $3.6 million for Montana for fiscal year 1980, with no local or state matching funds required. In many local areas, HRDC's have begun to subcontract actual weatherization work to locally-based energy businesses as a strategy to accelerate weatherization and stimulate local economic development.

5.6.2. FUEL BILL ASSISTANCE PROGRAM

In 1980 DCA's Community Services Division was given responsibility for administering Montana's Energy Crisis Assistance Program. Under this program, the state receives federal money to help low-income Montanans pay their winter heating bills. Individuals who qualify for fuel bill assistance have the payments made on their behalf directly to the utility or fuel vendor, beginning at the end of October when cold weather arrives. The program is administered locally by the 10 Montana HRDCs.

As of August 31, 1980, 16,330 households in Montana had received federal funds to help pay their fuel bills under the program. Almost $4.9 million has been distributed for fuel assistance and an additional $936,348 went to eligible households for other needs. The program ended on September 30, 1980.

The Home Energy Assistance Program, currently planned for the coming fiscal year, essentially is the same program as the Energy Crisis Assistance

Program, which was in effect last winter. The DCA was designated by the Governor as the lead agency in Montana for administering the new program. Financing for the low-income assistance program this time will come partly from the windfall profits tax recently enacted by Congress (see Section 4.2.2.). It is not certain at this time how much money will be available to the state for fuel bill assistance this year.

5.6.3. LOCAL ENERGY EMERGENCY PREPAREDNESS AND PREVENTION PROGRAM

To alleviate or avert home heating emergencies, DCA's Community Services Division initiated a Local Energy Emergency Prevention and Preparedness (LEEPP) Program through Montana's 10 HRDCs in the fall of 1979. Under the federally-funded LEEPP Program, each HRDC hired local coordinators, initiated an outreach and survey campaign to identify the low-income Montanans most vulnerable to home heating emergencies, and formed local councils to set priorities, mobilize local resources, and develop and hold public hearings on a LEEPP plan.

Each of the plans developed by the HRDCs include the following activities: public education and self-help prevention and preparedness, expanded weatherization, conversion to alternative heating sources, operation of the Energy Crisis Assistance Program, and increasing the level of energy emergency preparedness in the event that large-scale fuel shortages or supply interruptions develop.

While the short-term goal of the LEEPP Program was to assure that low-income Montanans home heating needs were met last winter, the long-term goal of the program is to assure the eventual conversion of low-income homes to locally available non-inflationary fuels like low-cost solar and wood or coal furnaces.

5.6.4. MONTANA COAL BOARD

The seven-member Coal Board administers the sections of Montana's coal development impact legislation (Section 90-6-201 et seq. MCA) which established the coal impact grant program "to assist local government units which have been required to expand the provision of public services as a consequence of large-scale development of coal mines and coal-using complexes." The program is funded by 8.75 percent of the coal severance tax revenue.

From its inception in July 1975 through July 1, 1980, the Coal Board awarded $23.8 million and tabled or denied applications for $20.7 million. About 90 percent of the awards fund public facilities and capital equipment such as water and sewer systems, school construction and remodeling, fire and law enforcement vehicles, and local government service buildings. Awards also have funded public services such as juvenile probation, mental health, law enforcement, and library materials.

The Board's review process for grant applications includes staff review, evaluations of local tax effort, review by other affected agencies and discussions with local proponents of each proposed project. The Board's enabling legislation mandates that "grants shall be awarded on the basis of: 1) need; 2) degree of severity of impact from coal development; 3) availability of funds; and 4) degree of local effort in meeting these needs."

The Board evaluates the degree of local effort, including bonding capacity and millage levies, except when planning grants are being considered. After awarding a grant, the Board contracts with the local governing body. Up to 10 years of reasonably anticipated severance tax revenues may be legally committed by the Board. In general, the Board does not award grants in excess of the anticipated revenues of the fiscal year. At least 50 percent of the available funds must be awarded to local units that

have experienced or could experience a 10 percent population growth during any three-year period since 1972 as a result of coal development.

The purposes of the local impact assistance program are to enable local governments to provide the additional services and facilities required because of coal development and to spare local resident taxpayers inequitable financial burdens. Assistance is especially needed for planning for anticipated impact, for front-end costs, and in jurisdictions facing continuing public finance inequities (that is, where the jurisdiction that incurs the public costs of impact is not the jurisdiction that benefits from the increase in taxable valuation). The impact program has become the focus of differences of opinion about both the kind (grants, loans, loan guarantees) and degree of assistance that is equitable, what constitutes appropriate levels and kinds of local effort, and whether direct impact includes secondary impacts. In the commercial centers that serve the coal area it has been difficult to identify and compare beneficial and negative effects on public finance. To resolve this problem, the Board commissioned a study on the effects of coal development on Billings.

The study, which was completed in September 1980, concluded that the coal industry will add about 800 people to Billings' population each year during the next decade, and that more people in outlying areas will be coming to the city for shopping and services. The fact that Montana has no sales tax has particularly adverse effects on the city of Billings. The report said that it is unlikely the city will be able to generate enough money from property taxes, fees and grants to meet the increasing demands placed on it by the coal boom. According to the study, "This situation suggests that a case can be made by Billings to share in certain Montana coal tax receipts."

5.6.5. ENERGY IMPACT ASSISTANCE PROGRAMS

In its role as the state's community development agency, DCA makes special efforts to assist communities which are or may be impacted by energy development. The Community Development Division provides direct planning and technical assistance to communities, serves as an active advocate for those communities to other state and federal agencies, provides staff support to the Montana Coal Board, distributes the county planning funds derived from the coal severance tax, and performs the staff work for activities required of the Governor under the Farmers Home Administration 601 Energy Impact Assistance Program.

Through the DCA newsletter, meetings, workshops and individual contact, DCA helps to inform local planning boards, officials and others of energy-related activities that might affect their communities. During the past two years, DCA has presented or assisted with workshops designed to help communities assess potential impacts, develop growth management and impact mitigation strategies and improve their financial management capabilities.

To improve its ability to provide needed assistance to local communities, DCA proposes to establish an energy impact assistance field office in eastern Montana. The field office staff would include a planner, a fiscal management specialist and a public works specialist. Funding for the field office for one year would be provided by the Farmers Home Administration, the Montana Coal Board and the Department of Housing and Urban Development. The field office would primarily assist communities in areas experiencing or anticipating coal development.

Under the FmHA 601 Energy Impact Assistance Program, the state must designate areas experiencing or anticipating impacts from coal or uranium development, coordinate planning efforts in designated areas, and develop a state investment strategy recommending priorities for FmHA 601 eligible projects identified in FmHA approved plans. The FmHA program provides grants for planning, site acquisition and site development for housing, public facilities and public services in designated coal or uranium development areas. Planning grants require no local match; site acquisition and site development grants require a 25 percent local match. The FmHA 601 program is designed to be used with other federal, state and local funding sources. A major purpose of the program is to provide sufficient, affordable housing in rapid growth energy development communities.

To be designated as an impact area under the FmHA 601 program, an area must have experienced at least an 8 percent growth in eligible coal or uranium development employment during the year preceding the designation or must anticipate an 8 percent growth in each of the next three calendar years.

The eight Montana counties designated to date under the 601 program are Big Horn, Carbon, Custer, Musselshell, Powder River, Rosebud, Treasure and Yellowstone. Additional areas of Montana may become eligible for designation within the next year or two. The FmHA 601 program itself may undergo major expansion if the pending impact assistance legislation (see Section 4.2.6.) is passed.

5.6.6. OTHER ACTIVITIES

DCA's Highway Traffic Safety Division has promoted the state's energy conservation program through a number of activities undertaken or continued in 1980. They include a program, coordinated through DNRC and completed in 1980, to train all Helena-based state employees in safe and fuel efficient driving practices; a program to improve the safety and fuel efficiency of state motor pool vehicles, coordinated through the Department of Highways; a public information program relating to the safety and fuel-saving benefits of the 55 mph law, coordinated with DNRC; and a program to develop and evaluate a bicycle operators' training program in Missoula, coordinated with the City of Missoula.

In February 1980, DCA's Community Services Division sponsored a training conference for energy program workers from Montana's 10 HRDCs. Training sessions were held on basic weatherization techniques and their on-site applications; management training for energy coordinators; home energy audits; and community mobilization, organization, and education. Other topics included national energy policies and their effect on low-income citizens, utility rate intervention, and national and state energy legislation. A follow-up conference was held in June 1980 to explore conversion and alternative energies and techniques.

5.7. DEPARTMENT OF FISH, WILDLIFE AND PARKS

The Department of Fish, Wildlife and Parks (FWP) is responsible for management of Montana's wildlife, state recreation lands and other types of state parks. Department policy is set by the Montana Fish and Game Commission, which consists of five gubernatorial appointees from five districts established by law.

FWP controls a variety of land in Montana, including game management areas, fishing access sites, state parks, monuments and recreation areas and specialized facilities such as fish hatcheries and bird farms. FWP authority over these lands exists under a number of arrangements, including patent, deed, lease, easement, agreement or withdrawal. Total land administered as of August 1980 was 316,232.44 acres,plus 63 lots.

In 1978 the Fish and Game Commission adopted a new oil and gas leasing policy for department-controlled lands. The Department of State Lands (DSL) conducts a preliminary environmental review (PER) before selling oil and gas leases on any state land. DSL notifies FWP of all acreage being considered for lease. FWP inspects each site and may recommend that certain stipulations be attached to leases to protect wildlife or other natural and cultural land values. DSL may accept or reject FWP recommendations. The PER process presently takes approximately four weeks from tract identification to completed PER report.

The volume of leases and amount of acreage involved has been increasing, and FWP has taken the position that the PER study period is not adequate to ensure that lands are properly inspected and protected.

The Commission policy establishes a two-step process and applies only to lands for which FWP owns both surface and mineral rights. Where the mineral rights are owned by another party, the review process must be negotiated. A seismic exploration permit, for activities that cause no surface disturbance other than that necessary for seismic tests, requires a PER.

Applications for leases for exploratory well drilling or development, however, must be accompanied by a complete environmental impact statement prepared by FWP. Applicants are responsible for the cost of EIS preparation and the statement must include all necessary stipulations to ensure that oil and gas drilling and extraction will not adversely affect the purposes for which FWP properties were acquired.

In the case of major energy or other facilities and mines, FWP reports on the impact of the developments on fish and wildlife resources. FWP also advises various federal agencies on the impacts of energy-related activities such as coal leasing and oil and gas development.

5.8. DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

5.8.1. SOLID WASTE MANAGEMENT BUREAU

As mandated in the 1977 Solid Waste Management Act, the Solid Waste Management Bureau sponsored a two-year, statewide study to develop a state solid waste plan. A key provision of the act is that the state shall promote waste recycling and resource recovery systems for energy production where economically feasible. Using criteria such as proximity to major population centers and availability of energy markets, the study identified three areas (Billings, Great Falls and Missoula) with the greatest potential for developing recovery facilities. Future operations in the three areas could process up to 238,000 tons of refuse annually. The use of the organic refuse as fuel would be equivalent to 2.4 billion cubic feet of gas, 150,000 tons of coal or 18 million gallons of fuel oil. Great Falls and Yellowstone County are now actively engaged in solid waste planning.

Energy conservation is also a major focus of the solid waste program. The recovery of materials through recycling can produce substantial energy savings in manufacturing processes. Also, area land fills, an important aspect of local solid waste management plans, result in significant fuel savings through maximum use of equipment in an area.

The Bureau administers a $300,000 grant from the renewable resource development program (see Section 5.10.5.6.) for the solid waste management program, which funds local governments for planning local solid waste management systems. At present, 243 communities and 24 counties have conducted or are now conducting planning studies. These studies lay the groundwork for developing area waste management systems around the state. In addition, each participating local government is evaluating the potential for developing smaller resource-recovery systems using modular incinerators with heat exchange capacities.

5.8.2. WATER QUALITY BUREAU

5.8.2.1. WATER POLLUTION CONTROL

The Water Quality Bureau administers the Montana Water Pollution Control Act and the Montana Pollutant Discharge Elimination Permit program. All waterways in the state are classified according to Water Quality Standards adopted in 1973. The permit system applies to point sources of pollution discharging to surface water, which may include coal mines and energy facilities. To obtain a discharge permit, an applicant must have an acceptable waste-water treatment plan that meets the standards for the particular location and waterway affected.

5.8.2.2. URANIUM MINING

The Bureau administers state regulations pertaining to solution extraction of uranium. This includes permitting authority over operations proposing to discharge chemicals to groundwater for in-situ uranium mining. The rules require filing a permit application no less than 180 days prior to commencement of any proposed uranium solution extraction mining operation. Information on the site and environment, and proposed mining, monitoring and restoration plans must be submitted as part of the application. Conditions of permits include, but are not limited to, certain standards for well con-

struction, monitoring, reporting, control procedures and aquifer restoration. To date, the Bureau has not received an application for this type of mining.

5.8.2.3. MONITORING AND REVIEW

The Bureau is completing a two-year study, funded by the U.S. Bureau of Land Management, of potential coal-development impacts on benthic life —the tiny plants and animals that live on the bottoms of streams—in southeastern Montana. The study will be published by the U.S. Geological Survey. By early 1981, the Bureau will have completed biological-monitoring reports for eastern Montana, reports that may reflect the effects of energy development. The Bureau is also helping with biological and chemical monitoring of the Poplar River in conjunction with U.S.-Canadian concerns about the effects of Canadian power plants (see Section 5.2.1.).

The Bureau must also review any project covered under the Major Facility Siting Act to determine whether the facility will conform to water quality standards. It is also reviewing the U.S. Army Corps of Engineers National Hydropower Study (see Section 7.4.1.1.), which identified possible hydropower sites in Montana.

5.8.3. OCCUPATIONAL HEALTH BUREAU

The Occupational Health Bureau is the state radiation control agency. The Bureau regulates aspects of uranium mining such as stabilization of mine tailings. The Bureau also regulates air and water effluent concentrations of naturally-occurring radionuclides and, thus, can regulate effluents from uranium mining activities.

The Occupational Health Bureau also has authority to regulate handling and storage of uranium ore prior to concentration processes or interstate shipment. None of these uranium-related activities occurs in Montana at present.

5.8.4. AIR QUALITY BUREAU

The Air Quality Bureau is responsible for administering the Montana Clean Air Act and implementing clean air programs and plans mandated by the 1970 federal Clean Air Act. The federal act was amended in 1977 in a number of significant ways, including selection of a new target date, 1982 (formerly 1975), for bringing all areas of the nation into compliance with the federal standards for all regulated airborne pollutants. Regulated pollutants include carbon monoxide, particulates, nitrogen oxides, hydrocarbons, lead, ozone, and sulfur dioxide. The federal Clean Air Act required all states to prepare plans for attaining and maintaining federal air quality standards, known as State Implementation Plans (SIPs).

All areas not in compliance with the federal standards are non-attainment areas. The 1977 amendments required each state to submit SIP revisions to EPA by January 1, 1979, outlining a proposed strategy for bringing the areas into compliance. Colstrip, for example, is a non-attainment area for particulates. Other non-attainment areas in Montana pertain to carbon monoxide, sulfur dioxide, and particulates and include, for one or more of these pollutants, Billings, Missoula, Great Falls, Butte, East Helena, Columbia Falls, Anaconda and Laurel. The entire state is presently unclassified for ozone due to lack of data. The Air Quality Bureau submitted Montana's revised plan in April 1979. The EPA has approved, or conditionally approved, some portions of the state's plan but other sections still await EPA action.

If reasonable progress is not made in implementing the state plan, or if the 1982 deadline is not met, various federal sanctions will be applied. These may include withholding or redirecting federal grant monies in air pollution-related categories (e.g., funds for highways and sewage treatment).

Prevention of Significant Deterioration (PSD) standards apply to all areas that are in compliance with federal standards for particulate matter and sulfur dioxide. PSD establishes three air quality classes. Class I is the highest quality and allows only a small incremental increase in pollution beyond existing conditions in the area at the time of designation. The bulk of the United States was designated Class II, which allows for well-planned growth and some additional pollution, although within limits that are well below the standards. Class III applies to areas of industrial growth and permits incremental increases in pollution up to, but not exceeding, the standards. Since 1974, Congress, the states and Indian tribes have been eligible to petition EPA to classify areas Class I and Class III, providing that various specified procedures are followed. Wildernesses and certain other specially managed areas in existence before August 1977 received automatic Class I designations, and the Northern Cheyenne Tribe requested and received Class I status for its reservation in mid-1977. Both the Confederated Salish and Kootenai Tribes and the Fort Peck Tribes are presently preparing Class I requests for their reservations (see Section 9.8.).

Of interest to Montana is a provision of the federal Clean Air Act which states that pollutants originating in Canada are to be included in calculating the existing air quality of neighboring regions of the United States for purposes of enforcing the PSD standards, unless the governor of a state takes action to exclude such pollutants.

After March 1979, the states were to be responsible for administering the PSD regulations and for processing redesignation petitions. However, due to changes in the federal rules, PSD delegation for Montana has not yet been approved. The Air Quality Bureau is presently evaluating procedural alternatives for PSD administration.

The Air Quality Bureau also reviews projects covered by the Major Facility Siting Act (MFSA) for compliance with state and federal air quality standards. See Section 4.1.1.1. for a full discussion of the MFSA.

5.8.4.1. MONTANA AMBIENT AIR QUALITY STANDARDS

Because the Board of Health and Environmental Sciences had determined that Montana's air standards (adopted in 1967) were unenforceable, due to the word "standards" being interpreted to mean "guidelines" rather than regulations, the Air Quality Bureau conducted a two-year study of the state's standards. New air quality standards were proposed and adopted with some modifications in July 1980 after extensive public hearings.

The new rules are generally more stringent than the federal EPA standards, and they include a number of criteria for which there are no EPA standards, such as visibility (Class I areas only), hydrogen sulfide, and flouride. Public interest groups argued that the 1967 standards, particularly with reference to strip mines and coal conversion facilities, were not adequate to protect the health and environment of Montana's citizens. Affected industries, on the other hand, pressed for adoption of the less stringent federal standards.

5.9. DEPARTMENT OF HIGHWAYS

5.9.1. COAL SEVERANCE FUNDS

Although the Department of Highways no longer receives funds from Montana's coal severance tax, it did receive 9.75 percent of the coal tax revenue through fiscal year 1979 for highway improvement in coal-impact areas. During the four years covered by the law, approximately $15 million accumulated in the coal-area highway improvement account, but because federal matching funds were delayed, the Department did not commit funds from this account until August 1980. All funds from the account must be obligated by June 30, 1981.

Colstrip area highway improvements planned or underway at present are shown in Table V-1.

TABLE V-1
COLSTRIP AREA HIGHWAY IMPROVEMENT PROGRAM

Designation	FA Route[1]	Length	Estimated Cost to Construct or Reconstruct[2]
Sarpy Creek Road	FAS 384	27.9 miles	$ 9.4 million
Colstrip-Forsyth	FAP 39	29.7 miles	21.6 million
Rosebud-South	FAS 447	13.5 miles	4.4 million
Decker-Busby	FAS 314	15.0 miles	3.75 million
Birney-Southwest	FAS 566	Bridge	0.5 million
Crow Agency-Busby	FAP 37	27.0 miles	14.3 million
		113.1 miles	$53.95 million

[1]FAP - Federal Aid Primary Route; FAS - Federal Aid Secondary Route.
[2]These projects may not be constructed with coal tax funds alone. Project totals include some portions under construction or already constructed.
SOURCE: Department of Highways.

5.9.2. COMPREHENSIVE HIGHWAY NEEDS STUDY — COLSTRIP AREA

Within the next fiscal year, the Highway Department expects to complete a comprehensive study addressing the potential needs of all highways in the Colstrip area. The study includes all roads functionally classified as arterial or collector and others depending on projected land use development.

Traffic volume counts and a sufficiency rating of most roads in the areas are currently underway. Analysis will determine whether a particular roadway segment can carry traffic loads. Indian tribes, local planning boards, county commissioners and various state and federal agencies have been asked to form a steering or advisory committee to guide the study.

5.9.3. COAL HAUL ROADS STUDY

In 1978 the Federal Highway Administration requested Montana's participation in a multistate Coal Haul Roads Study. Although most coal mined in Montana will probably be hauled by rail, the Department of Highways participated in the study, which was completed in April 1980. Its purpose was to determine the impact on roads of increased use of coal.

The Department of Highways determined that only 54.9 miles of highways qualified as coal haul roads; of this mileage, 11.7 miles are primary routes, 18.3 miles are secondary routes, and 24.9 miles are county roads. These highways service three operating and three proposed mines. The estimated total funding needed for the 1979 to 1985 period is $12,828,000, plus maintenance and administration costs.

5.9.4. ENERGY CONSERVATION PROGRAMS

The Department of Highways created a new Public Affairs and Tourism Division in February 1980 to increase state assistance to the travel industry, reshape the Department's programs to meet rising fuel costs, encourage energy conservation in the Highway Department's operations and improve distribution of safety and other public information.

Ridesharing and Vanpooling. The Division's Conservation and Education Bureau coordinates the Department of Highway's Ridesharing and Vanpooling Program. In January 1979, the Department surveyed its employees as to their interest in busing, vanpooling, and carpooling. Finding a very high interest (85 percent) in busing and vanpooling, the Department organized vanpool routes and purchased three 12-passenger vans for this purpose. At the same time, under contract with DNRC, the Department of Highways surveyed all state employees in the Helena area and found that approximately 55 percent were interested in vanpooling or busing. The vans arrived in August 1979, and by September three routes were operating. Three more routes were added in October. The estimated annual fuel saved by operating these six routes is approximately 20,000 gallons. Interest in the vanpool program remains high, with approximately 75 passengers transported to and from work daily. Participating employees pay a monthly fee to defray the operating and maintenance costs of the vans.

The Department distributes information about both vanpooling and carpooling to the larger urban areas and maintains a computer matching program for setting up carpool programs in urban areas.

Driver Awareness Program. A Driver Awareness Program was initiated by the Department to teach the participants—state employees selected by their agency—how to instruct others on ways to save fuel through trip planning, maintenance, and driving skills.

Program participants are taught the fuel consumption effects of: 1) vehicle weight and size, anticipated load, design, engine and transmission options, and tire selection; 2) the effects of short trips, cold starts, idling, and route selection; 3) driving techniques—engine warmup, acceleration, vehicle momentum, and defensive driving; 4) how to tell when the vehicle needs maintenance and how to reduce rolling resistance and mechanical friction; and 5) the importance of record keeping. In addition, program participants receive intensive behind-the-wheel instruction in an instrumented vehicle and are taught the management and training skills necessary to conduct a Driver Awareness Program.

Motor Pool Fleet Management System. The Department's Conservation and Education Bureau has inaugurated a pilot project for an automobile fleet management system for the state motor pool. The system calls for selecting automobiles for their fuel efficiency and stresses tune-ups and regular maintenance. Its purpose is to demonstrate the usefulness of a management system to other public and private automobile fleets in Montana. This project is partially funded by a grant from the DNRC Energy Division.

The Department's Motor Pool and Equipment Division has purchased 36 six-cylinder compact cars to replace full-sized eight-cylinder cars and older, less efficient six-cylinder cars. Ten sub-compact cars, with a minimum estimated consumption of 25 miles per gallon, were also purchased, and 59 pickups and five station wagons were replaced with six-cylinder units. By continually upgrading the fleet's fuel efficiency and emphasizing employees' driving habits, the Division expects to reduce its fuel usage significantly.

Fuel Efficiency Education Program. The Department also has a grant from the Energy Division to operate a fuel efficiency training program for drivers. This program was previously operated by the Energy Division. During 1980, the program served over a thousand federal, state and local government personnel. By the end of 1980, an additional 300 Department employees will receive behind-the-wheel training in a specially-equipped automobile demonstrating fuel economy driving techniques.

5.10. DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

The Department of Natural Resources and Conservation (DNRC) plays an important role in protecting Montana's quality of life by executing its statutory responsibilities concerning the state's land, water, forest, and energy resources. Four divisions within DNRC have major involvement in energy programs. The Energy Division administers a wide range of state and federal programs dealing with renewable energy and energy conservation. It also analyzes the need for and alternatives to proposed energy developments. The Facility Siting Division is responsible for preparing environmental impact statements for projects that fall under Montana's Major Facility Siting Act and also for projects for which DNRC is designated the lead agency under the Montana Environmental Policy Act. The Oil and Gas Conservation Division administers laws regulating drilling and recovery of Montana's oil and gas resources. The Water Resources Division has a broad array of energy-related responsibilities associated with the uses, development and protection of Montana's water. In addition, the Board of Natural Resources and Conservation has authority to approve reservations of water under the Montana Water Use Act and to approve the siting of facilities under the Major Facility Siting Act.

The following subsections describe the principal energy-related programs and projects of these four divisions, as well as the most significant energy-related actions of the Board of Natural Resources and Conservation in 1979-80.

5.10.1. BOARD OF NATURAL RESOURCES AND CONSERVATION

The Board of Natural Resources and Conservation has authority to approve, modify, or deny applications for certificates of environmental compatibility and public need for all energy facilities covered by the Major Facility Siting Act. Table V-3 lists projects that the Board has certified to date, and Table V-4 summarizes the status of transmission line and hydroelectric projects that are now being processed.

During the past two years, a significant portion of the Board's attention has been devoted to Colstrip Units 3 and 4 and the associated transmission lines. Of particular significance was the Montana Supreme Court's decision of April 10, 1979, upholding a district court ruling that voided the project's certificate of environmental compatibility and public need because procedural errors occurred during the public hearing held before the Board. For a description of the Board's response, and the outcome of this case, see Section 10.1.

The Board approved a centerline for the Colstrip 500 kilovolt transmission line between Colstrip and Townsend, along with construction guidelines designed to lessen environmental and land-use problems. It amended the certificate of environmental compatibility and public need in response to the Colstrip applicants' request for an 8.3-mile reroute of the Colstrip-to-Broadview 500 kilovolt "north" transmission line. DNRC had determined that the requested route change would materially increase the environmental impacts. The amendment stipulated that the applicants confer with the U.S. Fish and Wildlife Service, the Montana Department of Fish, Wildlife and Parks, and DNRC, and prepare recommendations for mitigation and compensation for impacts to waterfowl in the area.

The Board also required the Colstrip applicants to purchase 6,000 acre-feet of water annually from the Yellowtail Reservoir. With this additional water, the present surge pond was held to have sufficient

capacity to operate all Colstrip units. It is to be managed for off-stream storage according to a plan to be approved each year by the state.

The Board approved an ownership transfer of 7 percent of the project's electrical output to Basin Electric Power Cooperative. One of the conditions of the siting certificate required the project owners to offer Colstrip power to Montana electric cooperatives. Because of certain fiscal and management advantages, the Coops requested that Basin Electric own and distribute this power on their behalf.

The Board has yet to deal with the issue of whether the Colstrip project owners must apply for an amendment to the certificate of environmental compatibility and public need because of design changes in the pollution control system.

In addition, in 1979 and 1980 the Board adopted a conceptual plan for electrification of state-owned dams; approved DNRC development of a plan for a state siting study that would identify sites or exclusion areas for future facilities; and considered and certified several transmission line corridors and centerlines in various parts of the state.

5.10.2. ENERGY DIVISION

The Energy Division was restructured in November 1979 and separated into two divisions within DNRC. Responsibility for energy facility siting activities was assumed by a newly-created Facility Siting Division (see Section 5.10.3.), except for energy need analysis and alternatives, which remained with the Energy Division. The Energy Division has a broad range of responsibilities, carried out by four bureaus: Conservation, Fuel Assistance, Planning and Analysis, and Renewable Energy (see Figure V-A). Each bureau's programs are discussed below.

5.10.2.1. CONSERVATION BUREAU

The Conservation Bureau currently administers four state-wide programs funded by the U.S. Department of Energy: the State Energy Conservation Program, the Emergency Building Temperature Restrictions Program, the Energy Extension Service Program, and the Institutional Buildings Grants Program. A new program, which the Bureau will implement in 1981, is the Residential Conservation Service Program. These programs are explained in the following subsections.

The Conservation Bureau also cooperates with other state agencies, including the Department of Community Affairs, Department of Highways, Department of Administration, and Department of Revenue, to ensure that energy conservation efforts are not duplicated within state government.

5.10.2.1.1. State Energy Conservation Program

The State Energy Conservation Program was created pursuant to the Energy Policy and Conservation Act of 1975 (P.L. 94-163). In accordance with the act, the state of Montana developed a plan to reduce energy consumption in Montana by 5 percent from projected 1980 consumption. The State Energy Conservation Program consists of the following activities:

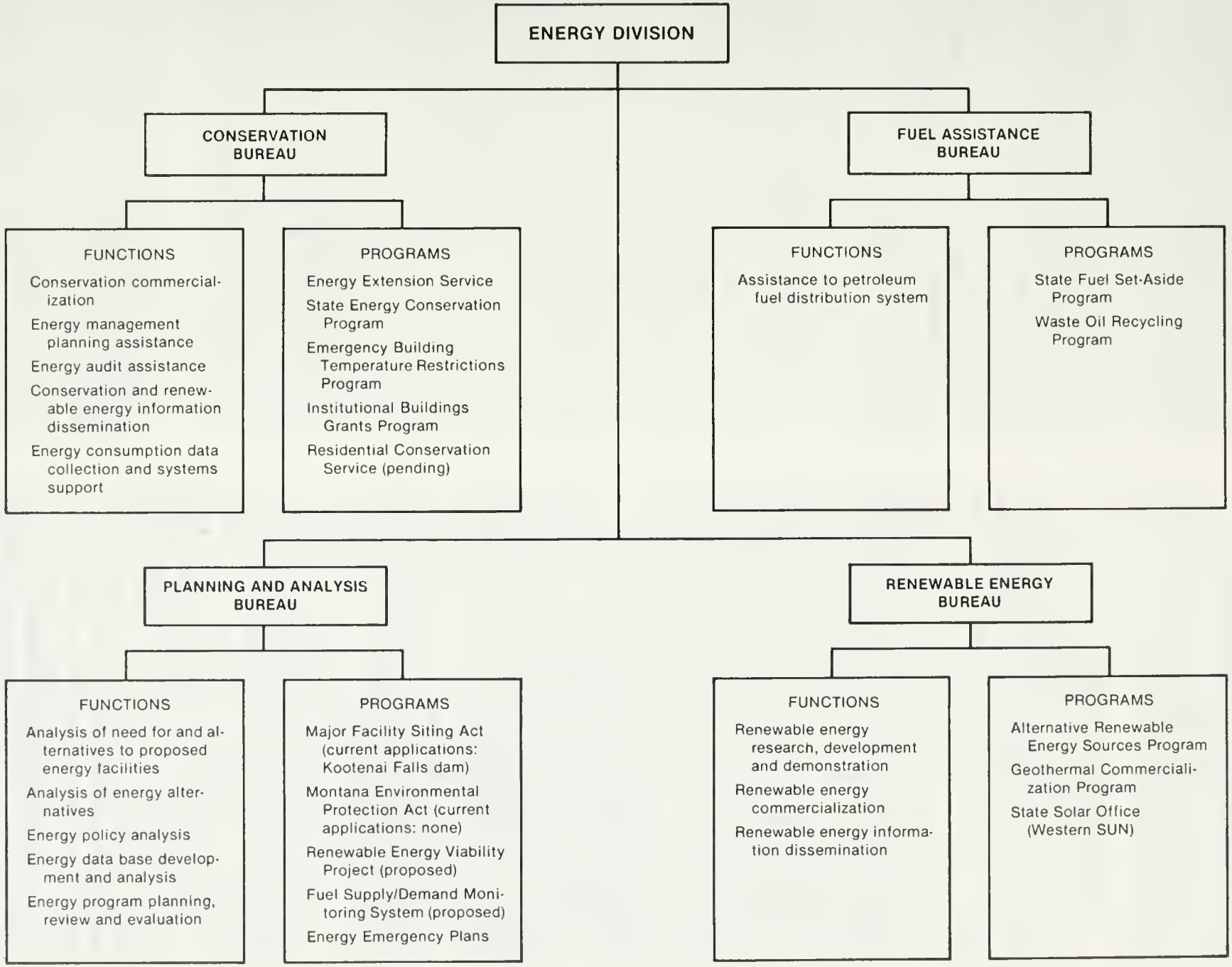
State Building Code and Thermal Efficiency and Lighting Standards. Under an agreement between the Conservation Bureau and the Department of Administration, the Building Codes Division inspects new building plans for compliance with the State Building Code. The Conservation Bureau also funds training workshops to educate local building code inspectors with regard to the State Building Code.

Procurement: Life Cycle Cost Analysis and Vehicle Fuel Efficiency Standards. Since 1978, the Conservation Bureau has contracted with the Department of Administration, Purchasing Division, to conduct life-cycle cost analysis of various items and to conduct workshops for state buyers to encourage them to consider energy conservation in purchases of supplies and equipment.

Current plans are to expand this program to local governments and operate the program directly from the Conservation Bureau.

Energy Managing, Auditing and Retrofitting State Buildings. The Conservation Bureau has developed a computerized Energy Consumption Monitoring and Reporting System to track and analyze energy consumption in state-owned and state-leased buildings on a monthly basis. The data from this system have been used by the Department of Administration, Architectural and Engineering Division, in the life-cycle costing of various retrofit

FIGURE V-A ENERGY DIVISION ORGANIZATIONAL CHART



options of state buildings. Several other agencies have requested the data for cost projections.

The Bureau also performs infrared thermal scans of state buildings to provide graphic evidence of potential energy savings from retrofit.

Car Pool/Van Pool: Increase in Transit Level of Service. The Conservation Bureau lends technical assistance and promotional funds to cities and various organizations for car pool and van pool programs and the use of mass transit. A model car pool and van pool program will be developed for local governments in 1981.

The Department of Highways purchased three vans for a pilot van pool program in Helena. The Conservation Bureau helped develop the program and funds a position to coordinate the program.

Enforcement of the 55 mph Speed Limit. The Conservation Bureau has cooperated with the Department of Community Affairs, Highway Traffic Safety Division, in a public awareness campaign about the benefits of the 55 mph speed limit for energy conservation and highway safety. Television and radio spots have been developed, billboard space purchased, bumper stickers distributed, and brochures created to get this message across.

Energy Conservation Education. The Conservation Bureau maintains an inventory of energy conservation pamphlets, brochures, booklets, bumper stickers, etc. provided to the public by request. Much of the material is also distributed at conventions, schools, and meetings.

The Bureau has also funded an energy conservation film library in Great Falls, and it has contracted with Montana State University to develop an energy education curriculum.

An annual summer energy camp is sponsored by the Conservation Bureau for junior high students. Students who attend the camp are given hands-on training on various energy conservation techniques and alternative energy technologies.

Energy Audit. The Bureau provides energy audit assistance and distributes energy audit workbooks for various types of buildings. A major project for 1980 and 1981 will be to develop a computerized commercial building energy audit system based on Montana-specific baseline data.

Fuel Conservation Management. The Fuel Conservation Management program was created in the summer of 1979 during the nationwide shortage of gasoline and diesel fuel.

The Conservation Bureau, through an agreement with the Department of Highways, provides training in fuel-efficient driving techniques for state, federal, and local government employees,as well as for driver's education instructors.

TV and radio spots are being developed to tell people how to conserve energy by good vehicle maintenance, fuel-efficient driving techniques, and trip planning. Newspaper ads and tabloids will also be prepared and distributed to major Montana newspapers.

A new statewide program to reuse crankcase oil will be developed. The Montana Petroleum Association, fuel distributors, and other state agencies are cooperating with the Energy Division to plan and implement this program.

5.10.2.1.2. EMERGENCY BUILDING TEMPERATURE RESTRICTIONS PROGRAM

In July 1979, the President ordered that the Standby Emergency Building Temperature Restrictions (EBTR) be imposed immediately, according to the provisions of the Energy Policy and Conservation Act of 1975. The Conservation Bureau administers the EBTR program for the state.

EBTR regulations restrict temperatures for heating, cooling, and domestic hot water in commercial, industrial, government, and other nonresidential buildings. The regulations generally require that thermostats be set no lower than 78 degrees F for cooling, no higher than 65 degrees F for heating, and no higher than 105 degrees F for domestic hot water. Provisions are made, however, for maintaining temperatures at these limits as an alternative to thermostat settings. The regulations also require that room temperature be set back when the building is unoccupied.

Owners and operators of buildings covered by the regulations are required to post a "Certificate of Building Compliance" in a prominent location in their buildings within 30 days of the effective date of the regulations. Tenants also are required to comply with the regulations, though they are not required to post a Certificate.

Certain types of buildings and portions of certain buildings are excluded from the temperature restrictions. Exemptions also are available under certain specified conditions.

Civil penalties of up to $5,000 and criminal penalties of up to $10,000 are provided for violations of the regulations.

5.10.2.1.3. ENERGY EXTENSION SERVICE

The Energy Extension Service (EES) is a DOE-funded information and outreach program designed to encourage energy conservation and the use of renewable energy by consumers. The Montana EES program began in June 1980, and is administered by the Conservation Bureau.

The program's initial efforts are directed toward four specific areas. In the first, EES will encourage greater energy efficiency in local government operations. Local governments will also be encouraged to promote energy conservation and renewable energy through their authority in subdivision regulation, zoning, and expenditure of community development funds. During 1980, EES helped Montana's 10 largest cities develop energy management plans and will provide grants to four of them to implement those plans. EES will also help the next 18 largest city governments develop energy management plans, and it will design model energy conservation regulations for all local governments. EES will start work with county governments in 1981.

EES' second major effort will be to improve the ability of libraries to serve as technical reference centers on energy, by training local librarians in energy conservation and renewable energy systems and by strengthening the inter-library loan network and providing guides to readers interested in various energy topics. The first-year demonstration project will be conducted by the Lewis and Clark Library in Helena. The library will work closely with local businesses, citizen groups, and utilities to provide the best sources of information on energy conservation and renewable energy. This network, if successful, will later be expanded to other Montana cities and towns.

Developing conservation and renewable energy, as with other sources of energy, requires access to capital. In its third area of effort, EES will work with lending institutions to increase the significance of energy as a criterion in granting residential and commercial loans. EES will test this approach in Billings, working through the Building and Finance Committee of the Billings Community Energy Program (see Section 8.1.).

The fourth area in which EES will concentrate its efforts will be the Master Conserver Program, patterned after the existing Master Gardener Program. EES, in conjunction with the Cooperative Extension Service, has designated three counties with a strong rural-urban mix—Cascade, Flathead, and Missoula—for the pilot program. Fifteen volunteers from each county will receive training and technical assistance. These "Master Conservers" will then provide telephone assistance to individuals who need information about energy-saving practices for their homes. The first phase of the program will run from October 1980 through March 1981. EES plans to expand the program throughout Montana in the future.

5.10.2.1.4. INSTITUTIONAL BUILDINGS GRANTS PROGRAM

The National Energy Conservation Policy Act of 1978 authorized a two-phase grant program to reduce energy use and anticipated energy costs for schools, hospitals, and buildings owned by local government units and long-term care institutions. Since August 1979, the Conservation Bureau has administered the Institutional Buildings Grants Program (IBGP) in Montana. The IBGP provides funds on a matching basis (unless the institution qualifies for severe hardship, in which case up to 90 percent may be funded) for buildings constructed before April 10, 1977. The program consists of two phases, described below. Local government and long-term care facilities are currently eligible for this program only for Phase I, though a bill introduced in Congress in September 1980 would make these facilities eligible for Phase II as well.

The first step in Phase I is a preliminary audit to determine a building's annual energy consumption by month for the calendar year. Building characteristics such as size, type of fuel used, and rate of energy use are noted. Step two involves an energy audit, which is a brief survey and analysis of a building including: 1) building characteristic and annual energy consumption for the year; 2) operating changes or maintenance actions that might improve a building's energy efficiency; 3) estimated Btu savings if suggested operational and maintenance measures (retrofit) are implemented; and 4) initial assessments of building characteristics that affect its potential for using renewable energy.

Phase II involves a technical analysis of a building to determine its potential for conserving energy and converting to solar or other renewable energy sources. To be eligible for technical-assistance grants, all institutions must have implemented cost-effective operational and maintenance procedures that were identified in an energy audit.

After the technical analysis is completed, financial assistance is offered to schools and hospitals for purchase and installation of energy conservation measures designed to reduce energy consumption or allow the use of renewable energy sources. Energy conservation measures with a simple payback period of more than 15 years or less than

one year are not eligible for grants under the program, nor are measures that have a payback period greater than the remaining life of the building.

5.10.2.1.5. RESIDENTIAL CONSERVATION SERVICE PROGRAM

The Residential Conservation Service (RCS) Program is a new program created by the National Energy Conservation and Policy Act. Governor Judge designated the DNRC Energy Division as the lead agency on August 5, 1980, and a state RCS Plan is now being developed. The program will be implemented in May 1981, and funded primarily through the State Energy Conservation Program and the Energy Security Act.

The RCS Program will require covered utilities (Montana Power Company, Montana-Dakota Utilities, Pacific Power and Light and Great Falls Gas Company) to provide free home energy audits to any customers in their service area who request them. RCS regulations also require utilities to follow up on the energy audits by helping homeowners install and finance energy conservation and renewable energy measures.

Rural electric cooperatives will be encouraged to participate in the RCS Program voluntarily.

Besides the usual administrative and coordination activities, the Energy Division will develop and maintain lists of participating lenders, contractors and suppliers, to be updated monthly. The Energy Division will also set up a conciliation board to hear and resolve grievances relating to the RCS Program. In addition, the Division will develop energy audit training requirements and conduct the initial training of RCS energy audit instructors.

5.10.2.2. FUEL ASSISTANCE BUREAU

The Fuel Assistance Bureau is responsible for alleviating emergency and hardship petroleum fuel problems, assisting end-users of petroleum fuels in making satisfactory supply arrangements, and maintaining contact with oil companies and petroleum dealers. In addition the Bureau handles fuel arrangements for impacted areas, provides advice concerning the state's overall crude oil supply problems, and in the past has assisted interruptible natural gas customers in meeting stand-by fuel needs.

5.10.2.2.1. STATE SET-ASIDE OPERATION

The federal Emergency Petroleum Act of 1974, the Mandatory Petroleum Act, associated regulations, and executive orders of the Governor provide the basis for this operation. Regulations require each prime oil supplier in Montana to set aside 5 percent of his or her estimated available supply of gasoline, 4 percent of middle distillates, and 3 percent of propane for state use in solving individual emergency and hardship fuel problems. A given number of gallons is awarded in each case where hardship has been demonstrated, and when a company's "set-aside" is depleted, no more product can be assigned until the following month.

Applications for a given amount of finished petroleum product are logged, verified, and approved, modified or denied. If approved, the oil company involved is directed to provide the applicant the predetermined amount of product.

In 1979 the office handled 2,766 applications involving 27,700,411 gallons of fuel.

The volume of fuel set aside is relatively small (approximately 2.6 million gallons monthly) and provides only a temporary solution. Permanent allocation adjustments are handled through the federal Department of Energy (DOE). The Bureau streamlines this process by providing procedural information to all concerned parties and reviewing applications for completeness and accuracy.

5.10.2.2.2. OTHER SERVICES

The Bureau serves as a point of contact and coordinates procedures and paperwork among product dealers, consumers, and DOE to ensure that fuel supplies are exchanged in a timely and efficient manner. Information concerning supply connections for products not covered under the regulations, such as aviation fuel, is also maintained. Areas affected by new highway construction, closed oil outlets, energy development and other activities are eligible for certain fuel adjustments; in such cases, the Bureau assists in maintaining a smooth flow of product.

In an energy emergency, the Bureau is authorized to release the entire amount of set-aside product to serve the affected area and to trigger action at the federal level to offset further supply imbalances.

The Fuel Assistance Bureau played an important role in allocating fuel supplies and disseminating fuel availability information during the spring and summer of 1979, when Montana experienced a severe shortage of diesel fuel. The Bureau was inundated with fuel set-aside requests (340 requests in June 1979, compared with 17 in June 1978), requiring the addition of staff to handle the increased work load. During this period a temporary information gathering, analysis, and

dissemination unit was formed within the Energy Division to respond to inquiries, encourage conservation measures, and assess the extent of the state's fuel shortage.

The Bureau is currently streamlining the state set-aside procedures. Consequent to the 1979 diesel fuel shortage, the Division received a grant from the Old West Regional Commission to strengthen and improve state response to petroleum fuel shortages. The contract called for work in three areas: 1) to review and modify the procedures of the set-aside fuel program for increased operating efficiency, and develop an automated application-processing system; 2) to research all petroleum-related data currently available to the states, and develop an automated data-retrieval system for the EIA 25 prime supplier report; and 3) to develop and implement a public information program for petroleum fuels.

Concurrent with the Energy Division's efforts to develop a computerized set-aside system, an analagous system was developed by a consultant for DOE. The Set-Aside Management Information System (SAMIS), scheduled to go on-line in early 1981, is intended by DOE to give the states computer capabilities to operate their set-aside programs. It is being made available to a small group of pilot states, including Montana, free of charge for the first year. Nearly all of the work accomplished to date on the Montana system will be incorporated into SAMIS.

The Bureau will soon implement a waste oil recycling program. The program will concentrate on individuals who change their own crankcase oil. These individuals will be encouraged to bring the used oil to designated collection points. From the collection points, the used oil will be transported to re-refining plants located out of state. The Bureau will be involved in public education, initial development of a collection system, promoting products made from used oil, and coordinating all the parties involved in used oil recycling. This program is funded by the State Energy Conservation Program.

5.10.2.3. PLANNING AND ANALYSIS BUREAU

The Bureau has responsibility in four areas: 1) analysis of the need for and alternatives to proposed major energy conversion and transmission facilities; 2) analysis of alternative energy futures for Montana; 3) design and oversight of energy emergency planning procedures; and 4) collection and dissemination of energy information. The Bureau also handles energy policy analysis and assists in energy program planning.

5.10.2.3.1. ANALYSIS OF NEEDS AND ALTERNATIVES

The Bureau analyzes the need for and alternatives to proposed major facilities as part of environmental impact statements called for by the Major Facility Siting Act (MFSA) and the Montana Environmental Policy Act (MEPA). The Bureau is primarily concerned with the economic and technical feasibility of alternatives.

The MFSA requires the Board of Natural Resources to determine the need for any proposed major facility. Once a need for energy is confirmed, the Board then must determine whether the proposed facility is the best means for meeting that need. The MFSA directs DNRC to develop the analysis on which the Board bases its decision.

MEPA requires that alternatives to the proposed facility, including the "no action/no build" alternatives, be investigated. Analysis of that alternative proceeds in a manner analagous to the analysis of need under the MFSA and produces a recommendation based on the relative merits of the proposed facility and alternatives. Responsibility for conducting this analysis is assigned to DNRC at the discretion of the Governor.

Need analysis deals with the projected demand for energy which a proposed facility is to meet. A separate analysis is conducted for each proposed facility. The analysis can range from a review of projections provided by the utility to an independently derived projection of energy demand. A comprehensive need analysis requires consideration of the end-use and the fuels and conversion technologies appropriate to the end-use. Need analysis also assesses the responsiveness of demand to different economic variables, in particular, the price of the energy to be produced by a proposed facility.

The analysis of alternatives embraces the entire range of practical means for meeting the demand identified in the needs analysis. Alternative facility sites, facility sizes, conversion technologies, transmission and distribution systems, and pollution control systems may be examined, as well as conservation. Alternative fuels, including fossil, renewable and nuclear fuels, likewise may be studied, though only the alternatives that plausibly might be more attractive economically or have less social and environmental impact are analyzed.

The Bureau is responsible for analyzing the economic and technical feasibility of alternatives; the rest of the analysis is conducted by the Facility Siting Division. The MFSA requires the applicant to

explain why it chose the proposed energy source or conversion technology rather than other available alternatives.

The Bureau has recently undertaken needs and alternatives analyses for the Northern Tier crude oil pipeline, the Northern Border natural gas pipeline and the Northern Lights hydroelectric dam at Kootenai Falls.

5.10.2.3.2. ALTERNATIVE ENERGY FUTURES

A transition to alternative energy systems has already begun in Montana, though it is still on a limited and **ad hoc** basis. In virtually all cases these systems depend on a renewable energy source: falling water, sun, biomass, wind or geothermal. If a full transition to alternative and renewable energy systems is to occur, it will depend on greatly increased efficiency of energy use through conservation, new technologies for decentralized use of renewable energy sources, and use of fossil fuels to provide energy during the transition period. The Bureau is preparing to study the prospects and pitfalls of a concerted and extensive effort to achieve this transition statewide. This study will be known as the Renewable Energy Viability Project, described below.

Renewable Energy Viability Project. Currently, there are few data with which to assess the feasiblity of renewable energy use or choose among the energy options available to Montana in the future.

What are the renewable technologies? How well do they perform in a harsh northern climate? What do they cost? What else do they require (space, southern exposure, wood, ...)? How do they compare with traditional energy supplies? What are the local social, economic and environmental effects? The Renewable Energy Viability (REV) Project is designed to provide such information.

The REV project objectives are: 1) assemble pertinent technical information relevant to Montana; 2) assess the technical opportunities in terms of social, economic, and environmental effects; and 3) identify and examine particular state and local actions that might influence the rate and type of sustainable energy development.

If funded, the project will develop information on the possibility of future reliance on energy conservation and renewable energy sources. Using a range of technical disciplines, the REV project will examine conditions at the state, local and private levels. The project does not assume that Montana's energy needs should be met from renewable sources. Its task is to develop information in a framework that will permit conventional and renewable alternatives to be compared, using the same criteria.

The project will focus on the intermediate future, from the present to five to 20 years ahead. It is divided into seven major elements as described below.

Supply/Demand: A model capable of explaining past behavior can project alternative energy futures as a function of relative costs, availability, and various government policy incentives. The supply/demand model will yield the necessary data and analysis for comparing renewable energy sources and energy conservation with conventional alternatives.

Resource Assessment: The purpose of this element is to generate working estimates of each major renewable energy resource available in Montana — solar, geothermal, hydro, wood and biomass — and the geographic extent of the resource, as well as any seasonal and annual variation in that resource.

Technology Profiles: An analysis of the viability of renewable energy technologies and conservation opportunities evaluates the various technologies to determine the state of development, performance in Montana's climate, costs, reliability, availability in the marketplace, the quality and quantity of energy produced or saved, and the environmental and resource characteristics that determine suitability in a particular site.

Impact Analysis: The impact element is designed to examine and analyze the statewide and prototypical community economic, environmental and social impacts of a shift to renewable energy sources for supplying Montana's energy needs.

Public Participation: This element deals with the relation between the REV project and the general public. The public will be consulted on project decisions and participate in project activities in the model energy communities.

Transition Analysis: This element determines the viability of the renewable energy conservation option in "model energy communities" competitively selected from the cities, towns, counties and Indian reservations of Montana. The findings from the analysis of these model energy communities will be synthesized for application to other communities, and state level implications will be identified and analyzed.

Information Dissemination: The object of this element is to distribute information on the opportunities for and desirability of renewable energy sources. The primary audiences are energy policy makers and implementers at the state level, local government officials, residential, commercial and agricultural users of energy, and intermediaries such as bankers and architects. The general public may also use the information gathered by this project.

The design report for the REV project was completed in September 1979. The study is designed to be done in components, and the amount that is completed will be contingent on funding.

5.10.2.3.3. ENERGY EMERGENCY PLANNING

In late 1979 Congress passed the Emergency Energy Conservation Act (see Section 4.2.1.). The Act requires each state to submit an energy emergency plan to the Department of Energy 45 days after the President declares an emergency. In January 1980, Governor Judge directed the Energy Division of DNRC to formulate an energy emergency contingency plan that would meet Montana's special needs,as well as the federal requirements under the Emergency Energy Conservation Act.

The Energy Division has prepared a final draft of the Montana Energy Emergency Contingency Plan which is currently under review before public release. The contingency plan implements the Energy Supply Emergency Powers Act, passed by the 1977 Legislature, which defined the powers of the Governor during an energy shortage situation. This law, which was reenacted by the 1979 Legislature, is described in Section 4.1.3.

The contingency plan establishes criteria for declaring either a supply alert or an energy emergency and specifies the procedures that may be instituted during a supply alert or emergency. Guidelines that the Governor will follow in dealing with petroleum fuel and electricity supply shortages were developed by the Energy Division and circulated in early 1980 for agency, industry, and public comment. Public hearings were held in June 1980, and the rules were adopted in October 1980. These rules are part of the contingency plan.

The contingency plan requires the Governor to assign responsibility for implementing specific measures to appropriate state agencies. In developing the implementation plan for a specific measure, the state agency must consult the other agencies, institutions, and industries that would be affected by such a measure should the Governor invoke it. The severity of the shortage as well as the measures to be implemented will determine the specific administrative response to each situation.

The contingency plan calls for the Governor to request that each county establish a County Energy Emergency Panel, which would be the organizational connection between the local government and state government. During an energy shortage or emergency, the panels will advise the state on the energy resources in their counties and the impact of any shortages. The panels will also help the state implement appropriate conservation measures and cooperate with local or private groups formed to provide public assistance during an energy shortage.

5.10.2.3.4. ENERGY DATA COLLECTION AND ANALYSIS

The Energy Division is a central repository for all types of energy information of concern to the state. Data are primarily collected from published reports of state and federal agencies and energy-related trade journals. Primary objectives are to: 1) make the data more easily interpreted and readily available to agencies, researchers and the public; 2) verify these data among the various sources; 3) coordinate state and regional energy modeling information; and 4) provide computerized access to the data base for updating and retrieval. The Division annually publishes **Montana Historical Energy Statistics**, a compilation of tables and statistics depicting trends in energy production and consumption.

One of the Division's chief goals is to facilitate effective use of energy research data and analyses in state government. Division staff interact on a continuing basis with research staff in the university system, federal government, state government and the private sector.

In 1979 the Energy Division received a grant from the Old West Regional Commission to research and compile currently available Montana petroleum data. The report of this work, the **Montana Petroleum Review — 1979**, also contains an analysis of the state's fuel production, distribution, and marketing system, with reference to federal allocation controls and oil company marketing trends.

Federal legislation, particularly the Emergency Energy Conservation Act of 1979 (see Section 4.2.1.), provides additional incentive for the state to establish a reliable petroleum product data base. Under this act, the President may establish mandatory fuel conservation targets for each state as well as implement a fuel-rationing program. Earlier this year,DOE issued voluntary conservation targets for gasoline. These targets were based on extremely dubious federal data, however, and the state documented the discrepancies and substituted more accurate data. In order to revise the 1980 gasoline targets, the Energy Division worked with the State Motor Fuels Tax Division to substitute data on taxed

gallonage for inconsistent data from the Federal Highway Administration. As a result of this inter-division cooperation, steps have been taken toward establishing an exchange of fuel data in the future.

5.10.2.4. RENEWABLE ENERGY BUREAU

The Renewable Energy Bureau administers three major programs within the Energy Division: the Alternative Renewable Energy Sources Program, the Montana Geothermal Commercialization Program, and the Western SUN State Solar Office. These programs are described in the following subsections.

The Bureau also provides technical information and assistance on renewable energy to private and public individuals and organizations. Its long-term objective is to reduce Montana's dependence on fossil-fuel resources through the use of alternative forms of renewable energy.

5.10.2.4.1. ALTERNATIVE RENEWABLE ENERGY SOURCES PROGRAM

The Montana Legislature established the Alternative Renewable Energy Sources program in 1975. Grants are awarded for projects that research, develop or demonstrate such renewable energy sources as solar, wind, geothermal, water, and biomass. The program's goal is to provide 20 percent of the state's energy needs from renewable sources by the year 2000.

The act establishing the program also provides funding. Until January 1980, the program had been receiving 1.85 percent of the state's Coal Severance Tax revenue. The amount is now 2.5 percent. At present the program has an appropriation of $938,000 (including operating expenses) per fiscal year. Up to June 30, 1980, the program had distributed in excess of $2.6 million to 159 renewable energy projects, with the funding per project ranging from less than $1,000 to $100,000.

Proposals have been largely unsolicited and have come from a broad range of Montana residents, including farmers, ranchers, professors, businessmen and others. The basic requirement is that the project be conducted in Montana and that it use a renewable energy source. The 1979 Legislature amended the law to allow grants to projects promoting the commercial marketing of renewable energy sources. Projects that will use an excessive amount of energy or require large-scale capital investment are not encouraged. Preference is given to projects with matching support.

Proposals must contain complete and accurate technical and budget information, which is initially subject to staff review to determine the technical feasibility of the project. The proposals are then submitted, with staff recommendations, to the Renewable Energy Advisory Council. The council, composed of Montana citizens, appointed by the Governor, reviews each proposal primarily in terms of its potential for practical application and development in Montana and makes funding recommendations. The DNRC director considers the council and staff recommendations and makes final funding decisions. Contracts between DNRC and grantees are normally for one year, but can be extended. The Department may solicit specific proposals in order to initiate projects that are needed to meet the program goals and objectives.

Grant projects fall within the areas shown in Figure V-B. The submittal period for unsolicited grants is from August 1, through October 1, of each year. For fiscal year 1981, the Bureau received 175 applications requesting approximately $5.5 million.

Judging by the number of unsolicited proposals submitted to the Renewable Energy Program for solar projects (more than double the number submitted in all other renewable energy categories combined), this energy form is by far the most popular among Montana citizens. Undertakings in this area involve new homes and retrofits, air and hydraulic collectors, as well as several passive designs and home-made systems, including a tracking parabolic device. Solar research includes detailed engineering studies of a cross section of systems and a monitoring effort which involves collecting data on solar insolation at 30 stations throughout the state. By 1981, nearly four years of data will have been collected for most of the locations. Montana was the first state to have such a system. A Solar Test Facility has also been funded with the stipulation that it receive national certification, making it possible for the industry to have its solar panels tested and certified in Montana.

Since it has been shown that solar energy works as a residential heating source, few additional demonstration projects of this type will be funded by the Renewable Energy Program. High-performance, low-cost innovations and limited commercial development of solar energy will continue to be explored, however.

Montana's wind resource is substantial, and several projects deal with determining its energy potential. One such project is a prototype downwind system capable of producing up to 36 kilowatts of electrical energy. A grant to MERDI, joined by the Montana Power Company, financed the installation of a 25 kilowatt generator near Livingston. The Liv-

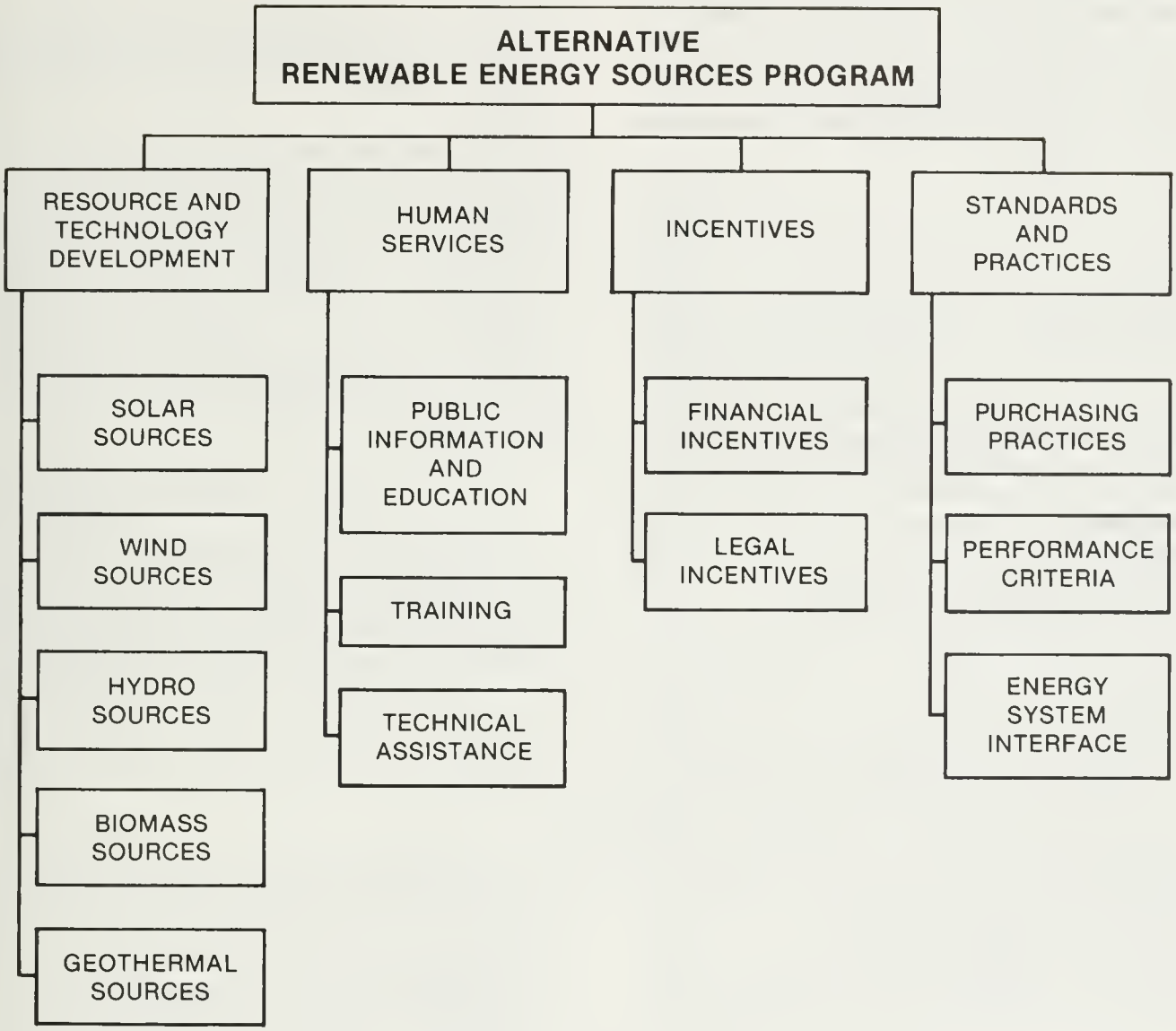


FIGURE V-B ALTERNATIVE RENEWABLE ENERGY SOURCES PROGRAM

ingston site has been visited by DOE officials and it is hoped that this location will eventually be chosen for development as a federal wind site.

Montana's biomass energy resource is receiving substantial attention. Program-funded research is helping define the biochemical and biological processes that govern the production of methane from animal waste. Another project is assessing various means for producing energy from such agricultural products as wheat, barley and straw. There is also considerable interest in developing efficient wood-burning systems.

Montanans have shown considerable interest in the production of fuel alcohol. The Renewable Energy Bureau organized a conference on gasohol, and the program supplied $100,000 for an alcohol plant at Glasgow and funded alcohol feasibility studies for various counties and groups throughout the state. The Montana Department of Agriculture has a similar program (see Section 5.5.) and has worked closely with the Bureau. The Department of Agriculture provided $100,000 for an alcohol plant at Great Falls and, with DNRC, funds for a project at Polson that has distilled tractor fuel from cull potatoes and surplus wheat. Many Montanans are building alcohol plants or stills without financial aid from the Renewable Energy Program.

Geothermal energy, a resource with considerable potential in the state, is also receiving much attention. One of the program's grants financed the nation's first geothermally heated bank—the First National Bank in White Sulphur Springs. A grant of $30,000 to the Montana College of Mineral Science and Technology for developing a computer program to identify geothermal potential and drilling three test holes at various locations resulted in a federal grant of about $400,000 for the project. Several other program grants have been viewed as "seed money," enabling the grantees to obtain federal grants or loans.

Montana has many sites where small-scale hydro systems (6-12 kilowatts) could produce electrical or mechanical power. Such a system can supply electricity for a house or small ranch. A recent federal law requiring power companies to buy back excess electricity from customers who generate their own electricity with wind and water generators has stimulated more attention to projects of this kind. In October 1980, Governor Judge appointed an interagency task force to study the current institutional framework for small-scale hydropower projects. The task force will recommend to the Governor a strategy for the efficient and rational development of such projects.

Each grant increases the store of information about renewable energy and produces at least one more individual with expertise in the use of renewables. The program has been in operation for five years. As reliable performance data become available, the information is distributed to the public.

The Renewable Energy Bureau has published several documents concerning the Program, including: the **Renewable Energy Program Plan**, which describes what types of projects are being encouraged; **Guidelines**, which tells how to prepare grant proposals; the **Montana Renewable Energy Directory**, a business directory listing all architects, engineers, designers and builders of renewable energy systems in Montana; **11 Energy Saving Laws** (co-authored), a listing of energy-saving, money-saving state laws and programs; and several **Project Spotlights**, which are one-page synopses of completed projects. **Montana Sunpower**, a description of projects completed before 1979, will be published early in 1981.

5.10.2.4.2. WESTERN SUN STATE SOLAR OFFICE

The State Solar Office was created as part of the 13-state Western Solar Utilization Network (Western SUN—see Section 6.3.) to promote commercialization of renewable energies in Montana. Western SUN, headquartered in Portland, Oregon, is one of four regional solar energy centers funded by the U.S. Department of Energy (DOE). The Montana Western SUN program has been housed in DNRC's Energy Division since November 1979. It was expanded in June 1980 to include "outreach" offices in Billings and Missoula.

The State Solar Office offers Montanans a wide range of renewable energy assistance. Specifically, the program is intended to: 1) provide Montana consumers with a basic understanding of solar technologies and their applicability on a local basis; 2) complement and assist industry marketing efforts; 3) establish a network of experienced individuals and groups to provide information and technical assistance to specific target audiences; 4) help remove institutional barriers to rapid solar commercialization, particularly at the local and state government levels; and 5) assist small businesses in the renewable energy field.

The Montana Western SUN program will contract through a competitive bidding process for work designed to achieve the program's objectives.

5.10.2.4.3. MONTANA GEOTHERMAL COMMERCIALIZATION PROGRAM

The Geothermal Commercialization Program is part of a nationwide project sponsored by DOE to

stimulate the commercialization of geothermal energy. The Renewable Energy Bureau maintains an up-to-date file on current geothermal development and on the technical aspects of geothermal applications; it also provides technical information to prospective developers or refers them to consulting firms and other agencies able to help. The geothermal planning staff is also available for on-site visits with landowners, community planners, and potential developers to advise them of development alternatives.

Geothermal energy, or "heat from the earth," is abundant in Montana. Yellowstone Park is an obvious source of geothermal heat and numerous others exist throughout Montana. There are approximately 60 hot springs in western Montana, with temperatures ranging from 50 to over 170 degrees F. In addition, much of eastern Montana is underlain by a large aquifer of hot water. Wells near Poplar and Baker have produced water temperatures in excess of 180 degrees F. Other areas in eastern Montana with geothermal potential are near Lewistown, Hardin and Malta. Table V-2 shows selected geothermal study sites in Montana.

Several individuals and communities are currently using or planning to use geothermal energy to reduce their fuel costs. In White Sulphur Springs, a bank and a motel use geothermal energy to supply over 80 percent of their heating needs, and a district heating system for several public buildings in the downtown area is under consideration. Boulder has received a $20,000 grant from the Old West Regional Commission to study the feasibility of building an industrial park supplied with geothermal heat. Geothermal district heating systems, capable of supplying the heating needs of hundreds of homes, are being considered by the towns of Baker, Poplar, Ennis, and the new community of Spring Creek.

Use of geothermal energy in Montana, as in other states, is limited by several factors. First, the short-term costs of conventional energy systems already in place or readily available commercially are less than those of an unfamiliar capital-intensive technology, however simple. More ambitious plans, such as geothermal district heating, are virtually unknown in the U.S. and require a felicitous combination of site and resource if the system is to appear profitable to investors.

A second problem facing geothermal projects in Montana is the general lack of legislative machinery to facilitate the process. Because geothermal energy is legally undifferentiated as an energy, water, or mineral commodity, development is hampered by a maze of permits, regulations, and reviews. The Bureau's forthcoming **Montana Geothermal Handbook** explains how the regulatory process works at present, but legislative clarification is still needed.

TABLE V-2
SELECTED GEOTHERMAL STUDY SITES

Study Site	County	Existing Use
Bozeman Hot Springs	Gallatin	swimming pool and space heating
New Biltmore	Madison	swimming pool and spa
Barkells	Madison	swimming pool
Boulder Hot Springs	Jefferson	swimming pool, hotel and greenhouse heating
Broadwater	Lewis & Clark	home and health club heating
Ennis	Madison	laundry water
Hunters	Park	abandoned spa
Madison Formation	Portions of eastern Montana	private ranch uses, oil well stimulation
Marysville	Lewis & Clark	one deep well for monitoring
Warm Springs	Deer Lodge	development in progress for heating portions of state institution
White Sulphur Springs	Meagher	space heating for motel and bank

SOURCE: DNRC, Energy Division.

The Alternative Renewable Energy Sources grant program, described above, has awarded grants to individual geothermal projects. The program has been expanded to fund geophysical studies of areas that are both geologically favorable for subsurface geothermal resources and commercially attractive in the near term. The grant program may also fund additional projects that demonstrate direct use of geothermal water.

DOE also provides funds for the Resource Assessment Team at the Montana Bureau of Mines and Geology (see Section 5.15.3.1.). This program gathers and compiles geological and hydrological information on Montana's geothermal sites.

5.10.3. FACILITY SITING DIVISION

In November 1979, responsibility for administering the Major Facility Siting Act (MFSA) and for evaluating certain projects under the Montana Environmental Policy Act (MEPA) was transferred from the Energy Division to a new unit, the Facility Siting Division (FSD). FSD is organized into two bureaus, Environmental Studies and Projects.

The Project Bureau evaluates specific energy projects and produces environmental impact statements under both the MFSA and MEPA. Table V-3 lists completed MFSA applications and Table V-4 lists the MFSA applications in process. The Bureau is currently preparing an environmental impact statement (EIS) for the proposed hydroelectric facility at Kootenai Falls (see Section 3.2.2.1.). The Northern Tier crude oil pipeline final EIS was issued in April 1980, and a draft EIS was issued in August 1980 on the Northern Border natural gas pipeline. Both of these projects fall under the requirements of MEPA and are described in Sections 3.1.5.1. and 3.1.6.1. respectively. Project Bureau personnel consist of managers for each project and their respective teams of technical specialists.

The Environmental Studies Bureau (ESB) is organized around the four major areas of expertise required to evaluate energy projects, i.e., engineering, social sciences, physical sciences, and biological sciences. ESB provides technical guidance and serves in a quality control and review capacity for the work performed by the Project Bureau. In addition, ESB administers the MFSA by performing centerline studies for transmission facilities, pre-application baseline studies, and generic studies of various types of facility impact by monitoring facilities that are operating or under construction; analyzing long-range plans; drafting siting rules and regulations; and providing advice and assistance to potential applicants, the public, and other agencies on siting-related matters. ESB also does planning and study design for future siting-related projects.

5.10.3.1. LONG-RANGE PLANS

The Major Facility Siting Act requires all parties planning to construct a facility (as defined by the act) within the ensuing 10 years to file a long-range plan with DNRC. All proposed facilities must be adequately described in a long-range plan at least two years before DNRC may accept an application. Planned facilities are discussed individually in Section 3 and listed in Table V-5.

The long-range plan must be submitted by April 1 of each year and must contain: 1) information on the size, type and location of all facilities to be owned and operated by the party, and an estimated construction date; 2) a description of efforts to coordinate the plan with others so as to provide a coordinated regional plan for meeting energy needs (this pertains only to utility facilities); 3) a description of efforts to involve environmental protection and land use planning agencies in the planning process, as well as other efforts to identify and minimize environmental problems at the earliest possible time; and 4) projections of the demand for the service, as well as an explanation of the basis for those projections and a description of how the proposed facility will meet the identified need.

Once a long-range plan is filed, DNRC reviews it for adequacy and requests additional information if the plan is inadequate.

TABLE V-3
COMPLETED MAJOR FACILITY SITING ACT APPLICATIONS

	Applicant(s)	Type	Size (MW/kV)	Approximate Proposed Length (miles)	Date Received	Date Certified	Centerline Approval
Major Facilities							
Anaconda Arbiter Plant & Associated Facilities	MPC	Plant & Transmission	25 MW 230 kV	5.4	5/14/73	7/20/73	
Arbiter Expansion & Electric Furnace	MPC	Plant & Transmission	57.5 MW 230 kV	4.0	7/23/74	3/10/75	
Colstrip Units 3 & 4	MPC, Puget Sound Power & Light, Portland General Electric, Washington Water Power, & Pacific Power & Light	Coal-fired electric generating plant	1,400 MW	NA	6/6/73	7/22/76	
Colstrip Units 1 & 2 Associated Facilities	MPC & Puget Sound Power & Light	Water supply system		30	6/29/73	3/1/74	
Transmission Facilities							
Billings-Yellowtail	Pacific Power & Light		230			5/4/73	
Billings Eastside Substation	MPC		100	.42	5/14/73	7/20/73	
Laurel-Bridger	MPC		100		4/20/73	9/73	
Laurel-Billings	MPC		100	22	5/14/73	9/73	
Colstrip-Broadview	MPC & Puget Sound Power & Light		230	110	6/29/73	11/15/74	6/6/75 12/5/75
Colstrip-Broadview	MPC[1]		500	113			12/12/77
Broadview-Townsend	MPC[1]		500	131			9/12/80
Circle-Flowing Well	McCone Electric Coop.		69	34	3/13/74	9/13/74	
Bridger-Roberts	Beartooth Electric Coop.		50/69	15	4/29/74	5/16/75	
Continental Oil	Continental Oil		100	1.0	12/31/74	5/16/75	
Wilsall-Clyde Park	MPC		161	11.4	12/31/74	6/26/75	12/5/75
Ulm	MPC		100	2.0	10/25/74	3/10/75	
Broadview-Alkali Creek	MPC		230	19	12/31/74	1/28/77	4/6/77
Anaconda-Hamilton	MPC		230	65	12/31/74	9/16/77	[2]
Troy-Mt. Vernon	Northern Lights, Inc.		115	18	12/30/77	5/3/79	9/21/79 6/6/80
Broadview-Glengarry	MPC		100	118	4/12/76	9/29/78	

MPC is Montana Power Company.
[1]The applicants also include the utility consortium that proposed Colstrip Units 3 and 4.
[2]Application still requires centerline studies and consideration of a system alternative.
SOURCE: DNRC, Facility Siting Division.

TABLE V-4
MAJOR FACILITY SITING ACT APPLICATIONS IN PROCESS

TRANSMISSION

Facility	Applicant	Size	Approximate Proposed Length (miles)	Status
Clyde Park-Dillon	Montana Power Co.	161 kV	193	Centerline approval was granted for the Clyde Park to Bozeman "B" line in July 1978. The other segments are under litigation.
Townsend-Hot Springs	Montana Power Co.[1]	500 kV	200	The centerline is approved to Townsend. On MPC's request, centerline studies have not proceeded west of Helena. BPA has received Congressional approval to construct a facility to transmit power from Colstrip and, therefore, may construct the line for the project applicants. (See Section 3.3.3.2. for further discussion.)
HYDROELECTRIC				
Kootenai Falls	Northern Lights	144 MW	NA	The DNRC is currently preparing an EIS on this proposed facility. See Section 3.2.2.1. for details.

[1]The applicants also include the utility consortium that proposed Colstrip Units 3 and 4 (see Table V-3).
SOURCE: DNRC, Facility Siting Division.

TABLE V-5
PROJECTED MAJOR FACILITIES AND TRANSMISSION LINES
(Indicated in 1980 Long-range Plans)

POTENTIAL APPLICANT	FACILITY	LOCATION	TYPE	SIZE	CONSTRUCTION PERIOD	PROJECTED DATE OF APPLICATION
Montana Power Company	Kerr Dam	Lake County	Hydro-electric	60-80 MW[1]	86-88	1982*
Montana Power Company	Buffalo Rapids 2&4	Lake County	Hydro-electric	Undetermined[5] [1]	89-	1982*
Montana Power Company	Thompson Falls	Sanders County	Hydro-electric	100 MW	85-87	1981*
Montana Power Company	Hauser	Lewis & Clark County	Hydro-electric	25 MW[6]	85-87	1981*
Montana Power Company	Ryan	Gallatin County	Hydro-electric	[6]	85-87	1981*
Montana Power Company	Carter	Choteau County	Hydro-electric	[6]	89-	1982*
Montana Power Company	Resource 89	(Unsited)	Coal-fired Electric	350 MW 350 MW	85-	1981 1986
Montana Power Company			Combustion Turbines	75 MW 25 MW 225 MW 25 MW	84-85 85-86 86-87 87-88	1982 1984
Montana Power Company			Coal Gasification[2]	[5]		
Basin Electric Power Cooperative	Sunrise	McCone County or a Wyoming site	Coal-fired Electric	500 MW 500 MW	85-89	1981
Northern Lights	Kootenai Falls	Lincoln County	Hydro-electric	150 MW	82-86	1980
Northern Resources, Inc.	Circle West	McCone County	Ammonia, Methanol-methyl-fuel and Synthetic Diesel Fuel	Up to 35,000 T/da lignite[5]		
Farmers Potash Co.[3]		Daniels County	Potash-fertilizer	Up to 3,500 T/da lignite[5]		

TABLE V-5
PROJECTED MAJOR FACILITIES AND TRANSMISSION LINES
(Indicated in 1980 Long-range Plans)

POTENTIAL APPLICANT	FACILITY	LOCATION	TYPE	SIZE	CONSTRUCTION PERIOD	PROJECTED DATE OF APPLICATION
Tenneco		Wibaux County	Coal Gasification	250 MMcF/d[5]	-90	
Washington Energy Co.	Redwater	McCone County	Coal Gasification	250 MMcF/d[5]	-88	
Utah International		Powder River Co.	Coal Gasification	250 MMcF/d[5]		
Northern Resources, Inc.		Yellowstone Co.	Coal Gasification	20 MMcF/d[6]		
Montana Power Company	Great Falls-Conrad	Pondera, Teton, Cascade Counties	Transmission Line	115 kV 60 mi	82-83	1981 (tentative)
Montana Power Company	Laurel-Bridger	Yellowstone, Carbon Counties	Transmission Line	100 kV 33 mi	81-82	1981 (tentative)
Montana Power Company	Alkali Cr.-Laurel	Yellowstone County	Transmission Line	230 kV 21 mi	82-83	1981
Montana Power Company	Roundup-Sumatra	Musselshell, Rosebud Counties	Transmission Line	150 kV 50 mi[5]	86-	1983
Montana Power Company	Missoula-Hoerner Waldorf	Missoula County	Transmission Line	100 kV 9 mi[6]		1981 (tentative)
Montana Power Company	Rimrock-Bellrock 8th St. (Billings)	Yellowstone County	Transmission Line	100 kV (upgrade)[5] 12 mi	82-	1981 (tentative)
Montana Power Company	Anaconda-Phillipsburg-Drummond	Granite, Deerlodge Counties	Transmission Line	100 kV 53 mi[5]	86-	1982
Montana Power Company	Garrison-Helena	Powell, Lewis & Clark Counties	Transmission Line	230 kV 50 mi[5]	85-	1981
Montana Power Company	Helena-Great Falls	Lewis & Clark, Cascade Counties	Transmission Line	230 kV 80 mi[5]	89-	1985
Montana Power Company	Plains-Superior or St. Regis	Sanders, Mineral Counties	Transmission Line	150 kV 25 mi[5]	84-	1981
Montana Power Company	Assiniboine-Richardson Coulee		Transmission Line	161 kV 160 mi[5]	85-	1981
Montana Power Company	Conrad-Cut Bank	Pondera, Glacier Counties	Transmission Line	115 kV 40 mi	84-85	1982 (2nd half)
Montana Power Company	Stanford-Glengarry tie		Transmission Line	100 kV 36 mi	83-	1981 (tentative)
Montana Power Company	230 tie to Benchland		Transmission Line	100 kV 10 or less mi[5,6]	83-	1981 (tentative)
Montana Power Company	Ovando-Missoula	Powell, Missoula Counties	Transmission Line	230 kV 60 or less mi[5]	87-	1983
Montana Power Company	tie 230 kV Dillon-Dillon-Salmon sub	Beaverhead County	Transmission Line	161 kV 10 or less mi[5,6]	85-	1982
Montana Power Company	Tap Wilsall-Alkalai to Chrome Junction		Transmission Line	230 kV 45 mi	84-85	1981
Basin Electric Power Cooperative	[4]		Transmission Line	345 kV	84-87	1981
Montana-Dakota Utilities Company	Scobey area	Daniels County	Transmission Line			By 1985
Washington Water Power Company	Thompson Falls, Wallace, Idaho (Pine Creek)	Sanders County	Transmission Line	230 kV	83-84	

[1]Pending agreement with Confederated Salish and Kootenai Indian Tribes.
[2]This facility would be constructed in potential partnership with the Montana-Dakota Utilities.
[3]Joint venture of Dreyer Brothers, Inc. and C. F. Land Company.
[4]This facility will be associated with a new generating unit.
[5]Potential facilities which may be needed but are not definitely planned at present.
[6]Transmission lines under 10 miles in length or major facilities smaller than 50 MW or 25 MMcF/d are not covered by the MFSA.
*Listed as application to FERC, DNRC application not listed.
SOURCE: DNRC, Facility Siting Division.

5.10.3.2. SITING STUDY

Although the Major Facility Siting Act has created an important evaluation and decision-making process for siting energy facilities in Montana, the process is merely reactive, being limited to the processing of applications for individual facilities on a case-by-case basis. Unless special "pre-application" studies are arranged, the state's involvement does not begin until an application for a specific facility is filed. DNRC recognizes the need for a framework of policies and information that can be used by applicants preparing individual facility proposals.

A siting study would develop social and environmental criteria and, using those criteria, identify geographic areas in the state that are appropriate or inappropriate for siting various facilities. Applicants could then eliminate inappropriate areas from further consideration and use the criteria in selecting alternative sites for proposed facilities. The criteria could incorporate such factors as prime agricultural, range, and forest lands; important wildlife areas; existing transportation and transmission routes; water availability and quality; air quality; seismic activity; specially designated areas; available labor force; availability of social services and housing; and public attitudes. The U.S. Forest Service and Bureau of Land Management are interested in participating in this type of study and in providing both financial and in-kind support. They have signed a memorandum of understanding for corridor planning studies (see following section).

The siting study could include planning questions for both energy conversion facility siting and corridor planning. Two planning approaches are currently being used in other states: site banking, in Maryland, and designation of exclusion and avoidance areas, in North Dakota. In the site banking approach, the state selects, approves and acquires land suitable for energy development. This requires large capital expenditures by the state. In the avoidance and exclusion approach, the state determines areas unsuitable for energy facility siting; no specific site is approved, and remaining locations are put in an "undecided" category. Specific impact studies can then be conducted on a case-by-case basis. Savings to industry and the state would result from omitting consideration of areas unsuitable for energy development.

The Facility Siting Division is seeking approval and funding for a siting study for Montana.

5.10.3.3. CORRIDOR PLANNING

In mid-August 1980, the U.S. Forest Service (USFS) Region 1, the Bureau of Land Management (BLM) Montana State Office, and the state of Montana formally agreed to establish an interagency utility-transportation corridor planning effort within Montana. Public interest reflected in national and state legislation directs federal and state agencies to use utility and transportation corridors to minimize the adverse environmental impacts of proliferating separate linear rights-of-way.

USFS and BLM are particularly concerned that corridor planning should occur in the context of federal land management planning. Neither agency has complete jurisdiction, however, nor does either have a planning program that adequately considers linear rights-of-way. The state is concerned with private and state lands and is also interested in ensuring that all corridors are sited in an acceptable manner. No existing land-management planning process can deal comprehensively with a 400-mile right-of-way corridor spanning several BLM planning units, several national forests, state land, private land, adjoining states, and other federal and state agency administered lands. Nor is there an interagency land-management process that considers future corridor needs. This is the reason for the cooperative corridor planning effort.

For such a process to succeed, it must be consistent with Montana laws and policies. Unlike their federal counterparts, Montana land-management agencies lack a statutory mandate to designate utility-transportation corridors before receiving applications under the Major Facility Siting Act (MFSA). Thus, this effort goes considerably beyond the state's current planning for future corridors.

Goals that will guide the federal-state utility and transportation corridor planning effort are as follows: 1) minimize the social, economic, and natural resource impacts of linear rights-of-way by planning in advance of specific project proposals; 2) preserve land uses on federal and state lands that represent the highest public benefit, as in an exclusion area such as a designated wilderness area; 3) achieve an efficient, cost-effective and coordinated public decision process for siting and managing linear rights-of-way; 4) ensure that utility-transportation linear rights-of-way needs are met in land-use planning; and 5) reduce costs and time in considering individual project proposals.

The corridor planning effort will be conducted in five general phases. Phase I will be an examination of existing utility-transportation corridor policies and standards, documenting problem areas and needs. Inventory maps of existing and proposed corridors in Montana will be prepared. Phase II will identify, evaluate, and recommend cooperative policies, siting criteria, overall stipulations by right-of-way type, and a siting methodology. Phase III will evaluate the various options to apply the corridor siting processes and recommendations developed in Phase II. Phase IV will consist of corridor designation or designations through long-term agency planning (federal sector) or site-specific evaluations of individual proposals (federal/state cooperation). A cooperative right-of-way management program will be developed in Phase V to serve as the basis for compliance and monitoring. A guide to assist landowners in negotiating with private companies and agencies for rights-of-way across their property will also be developed.

An Interagency Steering Committee will direct an interdisciplinary team in preparing the corridor study. USFS, BLM, and the state will participate as equal partners in the study and on the steering committee. Rights-of-way to be considered include highways, transportation-transmission facilities and systems for water, electric energy, petroleum products, communications and others as specifically defined in land-use planning legislation. Phase I will be conducted in 1981, with other phases to follow thereafter.

5.10.3.4. MAGNETOHYDRODYNAMICS (MHD) ENGINEERING TEST FACILITY (ETF)

The 1979 Legislature appropriated $500,000 to DNRC to encourage the siting of an MHD-ETF in conjunction with the next coal-fired power plant in Montana. The legislation (HB 908) mandated siting, engineering integration, need, environmental and socioeconomic studies to be done in carrying out the assignment. Over the past 18 months, DNRC has held numerous meetings with DOE to obtain a commitment for siting the ETF in Montana and providing matching funds to carry out the necessary studies.

Since a major thrust of the national MHD program is to demonstrate the feasibility of integrating an MHD facility with a conventional coal-fired power plant, potential future applicants for coal-fired generation facilities in Montana were contacted to determine their interest in participating.

As a result, DOE, Montana Power Company (MPC), and DNRC have reached tentative agreement on a process to develop a conceptual design for a hybrid MHD/conventional power plant. DOE and DNRC will share joint project management authority and MPC will act as prime contractor in conducting an analysis. The conceptual design will show how MHD generation capability could be incorporated into the design of a modern conventional coal-fired electric plant.

A second phase of the process will involve a siting study, an analysis of the demand for and marketability of facility output, and a comparison of the social and environmental impacts of a hybrid MHD plant with the impacts of a conventional plant. The conceptual design phase of the project will continue for two years and cost $1.2 million, including $500,000 from the state of Montana and $700,000 from DOE. Funding arrangements for the second phase have not yet been completed.

5.10.4. OIL AND GAS CONSERVATION DIVISION

In administering Montana's oil and gas statutes, the Oil and Gas Conservation Division is charged with preventing wasteful or harmful practices in resource recovery. The Division's responsibilities include classifying and inspecting wells, issuing drilling permits and pooling orders, and establishing well-spacing units and secondary recovery programs. Collecting data on oil and gas production, drilling and exploration activities is a primary division function. The information is published in the **Annual Review of Oil and Gas**. The Division also maintains a drill cuttings depository, and an individual well data and electric log library.

Oil and gas production information is presented in Section 2.

In early 1979, the Division was appointed jurisdictional agency for Montana by the Federal Energy Regulatory Commission to implement the Natural Gas Policy Act of 1978. The Division's responsibility as jurisdictional agency is to evaluate applications submitted by gas well operators who wish to qualify their wells for the maximum lawful price allowed under the Act. In 1979 the Division processed 328 applications by gas well operators. Montana is one of the few states that does not charge a fee for this service.

5.10.5. WATER RESOURCES DIVISION

The Water Resources Division administers DNRC's water resource programs. Included in its functions are administering the Montana water rights laws, preparing the state water plan, operating, maintaining and constructing state-owned water resource projects, managing floodplains, studying river basins, and administering the weather-modification, dam safety, technical assistance, and renewable resource development programs.

The Division is responsible for a master contract arrangement with the U.S. Water and Power Resources Service, which permits Montana to administer sub-contracts with potential industrial water users from Fort Peck Reservoir (see Section 7.2.3.).

The Division also participates in energy-related studies sponsored by the Missouri River Basin Commission (see Section 6.6.) and the Pacific Northwest River Basins Commission (see Section 6.7.). In addition, the Division has worked in cooperation with the International Poplar River Water Quality Board (see Section 5.2.1.) to assess the impacts of Canadian coal conversion on water quality in Montana. The Division also coordinated the state's response to the Army Corps of Engineers' National Hydroelectric Power Study (see Section 7.4.1.1.).

The Division's principal energy-related programs and projects are described below.

5.10.5.1. HYDROELECTRIC PROJECTS

The state owns some 35 major water conservation projects, as well as a number of small projects, some of which are no longer active and most of which are physically deteriorated. In March 1978, the Board of Natural Resources and Conservation adopted a "Conceptual Plan for Montana Water Resources Projects." The plan proposes hydroelectric facilities at state-owned dams and subsequent sale of the electricity through long-term contracts. The revenue thus derived will enable the state to repair and maintain existing projects and to construct new ones. The expertise gained from this process will also allow the state to provide assistance and advice to private owners of water projects who wish to undertake similar hydroelectric development plans.

Since adopting the plan, the Division has examined the potential engineering and economic feasibility of the following three projects: Broadwater-Missouri near Toston, Painted Rocks in southwest Montana, and Dead Man's Basin near Harlowton.

The Division has made a field reconnaissance and prepared a scheme of development for each site along with modifications to the existing facilities, where required. A computer program, simulating the seasonal flow characteristics of the watershed and operation of the plants, assessed the potential energy that could be generated at each site. The three projects could potentially generate 105 million kilowatt hours per year with an estimated market value in excess of $2,700,000. This energy is equivalent to that produced by approximately 60,000 tons of coal in a modern coal-fired steam electric generating station.

An economic evaluation of costs and benefits indicates that the three projects as a group would result in a benefit-cost ratio of 1.62 to 1. The Federal Energy Regulatory Commission (FERC) has indicated unofficially that benefit-cost ratios of 0.70 to 1 are justifiable for construction in today's markets, when hydropower is compared with a fossil fuel-fired plant, because the latter's energy cost will inflate with time.

The Division also identified potential markets for the power and means of delivering the energy to the purchaser. Small entities may wish to obtain power from these installations since the Bonneville Power Administration has indicated that it will not supply additional power to cooperatives beyond the mid-1980's.

In August 1978, DNRC received a federal grant to do a more detailed feasibility study at the Broadwater-Missouri site. The study was completed in April 1979 and evaluates two alternative configurations for the project. The optimal configuration was determined to be apron-mounted with four turbine-generator units, for a total installed capacity of 9.76 megawatts. The average annual energy from this project is estimated to be 56.44 million kilowatt hours.

A preliminary permit for the Broadwater-Missouri project was granted to DNRC by FERC, effective June 1, 1980. DNRC will apply for a FERC license under this permit. The application for a license requires environmental studies and necessary permits and coordination with other agencies. DNRC is negotiating a contract for the sale of power and investigating financing arrangements. Future efforts call for preparing final design and construction plans.

DNRC will also be initiating the development of hydropower at Dead Man's Basin and Painted Rocks Dam, possibly in cooperation with other interested developers.

In April 1980, the Water Resources Division received a grant from DOE to explore further the role that small-scale hydropower will play in Montana's energy future. DNRC will assist the federal government by: 1) further defining the state's most promising dam sites, identifying the owners of each site, conveying the program benefits to the owners, and encouraging site development; 2) expediting site development through state and local processing; 3) providing small-scale hydro developers with guidance and information regarding state and federal licensing and permitting requirements, available state and federal funding assistance, and the major factors to be considered in the overall project; and 4) promoting small-scale hydroelectric power development.

Section 5.15.4. describes a recent DOE research project on low-head hydroelectric potential in the Pacific Northwest.

5.10.5.2. ENERGY-RELATED INDUSTRIAL APPLICATIONS

The Water Resources Division receives applications for water use permits from present as well as potential water users. Among these applications are those for industrial use. Table V-6 lists all current applications for water use permits from prospective industrial users or brokers for water for industrial use. Following is a brief description of each project being proposed.

Northern Resources, Inc. has requested water for use in converting coal to ammonia, methanol-methyl fuel, synthetic diesel fuel and miscellaneous plant and mine needs (see Section 3.1.4.1.).

Utah International, Inc. requests water use for mine-mouth coal gasification or liquefaction projects (several gasification plants producing 250 million cubic feet per day) or mine-mouth coal generated electrical facilities (see Section 3.1.3.4.).

Farmer's Potash proposes to use water for potash (sylvanite) mining by solution methods. The preferred water source is the Poplar River, but Farmer's Potash has filed an application for water use for Beaver Creek (Sheridan County) if Poplar water is not available. The Poplar water availability is contingent on negotiations between Canada and the United States (see Section 5.2.1.). The coal burning portion of its potash fertilizer project brings this project under the Major Facility Siting Act.

Gulf Oil Corp. has requested use of a number of water sources. The proposed end use is for coal-fired energy production plants.

Mobil Oil Corp. has requested diversion of water from the Yellowstone River for conversion of coal to synthetic fuels and by-products.

Intake Water Company has requested two water use permits. One is for a Powder River diversion and the other is for a diversion of Beaver Creek (Wibaux Co.). Both applications are for industrial use with Intake acting as a water broker to the industrial user (see Section 3.1.3.2.).

Jan H. Paul has applied for a water use permit to divert water from the Yellowstone to be used in northeastern Wyoming. Although industrial uses are mentioned as one end use, they are not described.

Montana Water Storage Company and **Water Reserve Company of Montana** have applied for Tongue River water as brokers to sell to industrial as well as other users. No descriptions of type of industrial use have been given in the applications.

TABLE V-6
PENDING ENERGY-RELATED INDUSTRIAL WATER USE PERMIT APPLICATIONS

APPLICANT	SOURCE	COUNTY	AMOUNT[1]	TYPE AND INDUSTRIAL USE
Northern Resources	Big Dry Arm Fort Peck Reservoir	McCone	45.7 cfs/32,000 afy	coal liquefaction; plant and mine needs
Utah Int'l	Powder River & Fence Creek (Wyo)	Powder River	100 cfs/32,680 afy & storage	coal gasification and liquefaction; coal-fired electrical generation
Farmers Potash	Poplar River	Daniels	100 cfs/7,000 afy	potash fertilizer production (coal-burning)
Farmers Potash	Beaver Creek	Sheridan	10 cfs/7,500 afy	potash fertilizer production (coal-burning)
Gulf Oil Corp.	Powder River	Powder River	205 cfs/45,000 afy	coal-fired energy-production plants
	Mizpah Creek	Custer	27,000 afy	
	Pumpkin Creek	Custer	18,000 afy	
	Groundwater	Powder River	43,444 afy	
	Yellowstone River	Custer	105-210 cfs: 45,000 afy	
	Lignite Creek	Custer	500 afy	
	Coal Creek	Custer	300 afy (total not to exceed 90,000 afy)	
Mobil Oil Corp.	Yellowstone River	Richland	48.4 cfs/35,000 afy	synthetic fuels and by-products
Intake Water Co.	Powder River	Powder River	318,700 afy 245,700 afy inactive storage	sales to industrial users (not specified)
Intake Water Co.	Beaver Creek	Wibaux	14.5 cfs/6,800 afy	sales to industrial users (not specified)
Jan H. Paul	Yellowstone River	Prairie	348 cfs	not specified
Montana Water Storage Co.	Tongue River & Lay Creek (Wyo)	Rosebud	675 cfs reservoir, 100,000 afy/55 cfs direct flow, 40,000 afy	sales to industrial users (not specified)
Water Reserve Co. of Montana	Tongue River & Squaw Creek	Custer	500 cfs reservoir, 91,000 afy/50 cfs direct flow, 36,000 afy	sales to industrial users (not specified)

[1]Includes amounts of other uses: municipal, irrigation, etc.
SOURCE: Beneficial Water Use Permit Applications on file with Water Resources Division, DNRC.

5.10.5.3. WATER RESERVATIONS

Under the 1973 Montana Water Use Act, state and federal agencies, as well as political subdivisions of the state,may apply to the Board of Natural Resources and Conservation to reserve water for existing and future beneficial uses, or to maintain a minimum flow, level or quality of water.

It should be noted that under the Montana Environmental Policy Act, any proposed water appropriation constituting a "major action significantly affecting the quality of the human environment" requires an environmental impact statement. The Water Use Act allows DNRC to charge a fee to fund the preparation of an EIS.

During 1977-78, the Board of Natural Resources devoted considerable attention to allocating water reservations from the Yellowstone River. In 1977 DNRC received 30 reservation requests for Yellowstone Basin water. Applicants and objectors —primarily energy industry representatives— presented their views, and after hearings each applicant wrote a proposed Findings of Fact, Conclusions of Law and a Proposed Order for the Board's review. The Board's final decision, announced in December 1978, was to set aside over half the Yellowstone's water for wildlife and water quality protection. After municipal use, instream reservations and irrigation, lowest priority was given to water storage reservations, which could include large energy developments.

Over the next one to four years,the Division will begin to work with prospective applicants for water reservations in the Upper Missouri and Clark Fork Basins.

5.10.5.4. YELLOWSTONE RIVER COMPACT

The Yellowstone River Compact, executed by Montana, Wyoming, and North Dakota, and ratified by Congress in 1951, allocates waters of the Clarks Fork, Yellowstone, Bighorn, Tongue and Powder rivers. The compact recognizes water rights before 1950, rights designated to provide supplemental water supplies to land irrigated before 1950, and water rights for irrigation projects started before 1950. The compact divides the remaining water into percentages of the flow at the mouths of the streams as shown in Table V-7.

Article X of the compact prohibits diversion of water out of the Yellowstone Basin without the unanimous consent of the signatory states.

The issue of inter-basin transfer of water is controversial. The Yellowstone Compact Commission believes that the authority for approving transfer lies in each state's legislature, and in November 1978, it denied a request from Intake Water Company for water transfer (see Section 3.1.3.2.). North Dakota has approved inter-basin water transfers, but neither the Montana nor the Wyoming legislature has acted.

The Water Resources Division Administrator is Montana's representative on the Yellowstone Compact Commission.

TABLE V-7
DIVISION OF WATERS UNDER THE YELLOWSTONE RIVER COMPACT

TRIBUTARY	WYOMING	MONTANA
Clarks Fork Yellowstone	60%	40%
Bighorn	80%	20%
Tongue	40%	60%
Powder	42%	58%

5.10.5.5. RESERVED WATER RIGHTS COMPACT COMMISSION

The Reserved Water Rights Compact Commission was created by the 1979 Montana Legislature. The Commission was authorized to negotiate with the representatives of the several Indian tribes and federal agencies to "conclude compacts for the equitable division and apportionment of water" claimed under the reserved rights doctrine by the Indian tribes and federal agencies. The statute creating the Commission implicitly recognized a preference for negotiation of reserved water rights rather than litigation. The advantages of negotiation over litigation are several. Unlike a court decree it may apportion unappropriated waters. A compact may provide a scheme for dealing with future water requirements. If an agreement can be reached it is preferable that the parties themselves design the compact rather than having a decree imposed on them by the court. Finally, the parties themselves have better access to technical staff and greater expertise in technical matters than the court.

The negotiating process, however, will succeed only if each side feels that it can thereby better its position. Each side must believe that it has something to gain from negotiation. For example, the state would like to quantify the reserved rights to remove the uncertainty surrounding water affected

by federal and Indian claims so that current applications in conflict with those claims can be settled. The tribes' interest in negotiation is to secure a usable supply of water. Through negotiation the tribes may be willing to settle their water rights, possibly for a smaller amount, in return for help from the state in developing projects that would produce usable water. Governmental assistance could come through joint development of new water projects or through beneficial contracts for water from existing storage.

The Northern Cheyenne Tribe has indicated that an agreement giving them rights to developed water is an important motivation for entering negotiations. In the case of the Northern Cheyenne, the state already owns a storage project nearby, the Tongue River Dam. Any agreement reached with the Northern Cheyenne will need to address Indian rights to water stored behind the Tongue River Dam. Formal negotiations have also begun between the state and the Confederated Salish and Kootenai Tribes of northwestern Montana.

At present, no formal negotiations are in progress with the Blackfeet, Crow, Fort Peck, Fort Belknap, or Rocky Boy's tribes.

5.10.5.6. RENEWABLE RESOURCES DEVELOPMENT PROGRAM

The Water Resources Division administers the renewable resources development grant program (see Section 4.1.4.10.) for the purpose of applying part of the coal severance tax funds to develop and preserve the state's renewable resources. DNRC sets application requirements for the program and ensures that applications contain adequate data to make funding decisions. DNRC then rank-orders the projects and sends its recommendations to the Governor's office, which in turn submits them to the Legislature. The Legislature makes the final decision on grants and loans.

Priority is given to a project if it is a loan request as opposed to a grant, has benefits that are entirely public, is a viable demonstration project, conserves energy and resources, will meet stated objectives, has a potential for being successfully applied elsewhere, and has not received a renewable resources development grant previously. DNRC has received over $7 million in applications for fiscal year 1982-83. DNRC recommended funding for $1.3 million worth of grants to the 1979 Legislature, which added additional funding for other projects. Projects funded by the 1979 Legislature included repair of irrigation systems, city park development, loans for rangeland improvements, saline seep reclamation, streambank preservation, and biological weed control.

5.11. OFFICE OF PUBLIC INSTRUCTION

The energy education activities of the Office of Public Instruction (OPI) center on assisting with curriculum development, identifying applicable instructional materials, and identifying people who can provide technical assistance in energy matters to local schools in Montana.

Curriculum assistance generally involves incorporating energy education objectives into existing instructional programs rather than designing new units. The National Science Teachers Association has developed and disseminated interdisciplinary student/teacher energy education materials that OPI has used extensively. In 1979 and 1980 OPI conducted numerous seminars and in-service workshops on energy education for teachers throughout the state.

In addition, OPI has an "Energy/Environment Simulator" which is a portable computer that can simulate resource use, environmental impact, and outcomes of decreasing supplies and increasing demands. OPI staff provide the training needed for competent use of the simulator, and it is used as a teaching device throughout Montana.

An energy consumption survey of Montana school districts was conducted by OPI during the summer of 1979. An attempt was made to estimate the total annual use of natural gas, propane, fuel oil, electricity, coal and wood, as well as gasoline and diesel consumption for school buses. About 57 percent of the districts responded to this survey.

5.12. PUBLIC SERVICE COMMISSION

The Utility Division of the Public Service Commission (PSC) regulates the public utilities to provide safe, reliable and adequate service at the lowest achievable cost to consumers while concurrently giving the utilities a fair and reasonable return on their investment for the services rendered. Utility rate structures can be considered a vital aspect of the planning and reorientation occurring as conventional sources of energy become scarce and expensive. Rates may be structured to encourage energy conservation, encourage transition to "non-conventional" or alternative energy forms, and provide appropriate price signals that reflect the costs of energy production and distribution among all classes of consumers.

5.12.1. RATE STRUCTURE

In a 1979 order, PSC required the gas utility of the Montana Power Company to adopt a rate structure based almost entirely on a volumetric allocation of costs to all classes. Certain costs, such as storage costs, distribution costs and customer-related costs were allocated to the classes that derive a benefit from them. All declining blocks were eliminated.

Also ordered was a provision for an inverted-block or "lifeline" rate structure. These rates, which offer a 25 percent discount on the first 15,000 cubic feet of gas used from December through March, are available to residential, commercial, industrial and governmental consumers. Following the lifeline philosophy, the Commission also discontinued customer charges.

During the first half of 1980, the largely volumetric allocation of costs and the lifeline rate structure were extended to natural gas customers of the Great Falls Gas Company and Montana-Dakota Utilities (MDU) in orders following rate cases. The design of the lifeline rate, including elimination of customer charges, was similar for all three utilities.

In a 1978 order, the Commission required the electric utility of MDU to adopt an optional time-of-day rate for all customer classes. On-peak rates are charged between 10:00 AM and 10:00 PM and are approximately four times off-peak rates. Off-peak usage is priced below the non-optional rate. Special metering costs for this service are allocated to all rate payers.

In the same order, the Commission required MDU to adjust its rates downward to eliminate the excessive price for coal being paid by MDU to its wholly-owned coal supplier, Knife River Coal Company. MDU is appealing this case.

5.12.2. DEFERRED GAS COST ACCOUNTING

In 1979 PSC approved a deferred gas cost accounting procedure that allows MDU to recover the changing cost of gas under the National Energy Act of 1978. An industrial customer is appealing this case.

5.12.3. PUBLIC UTILITY REGULATORY POLICIES ACT OF 1978

PSC has been charged with considering certain rate-related standards set forth in the 1978 Public Utility Regulatory Policies Act. For electric utilities they are: 1) cost of service; 2) declining block rates; 3) time-of-day rates; 4) seasonal rates; 5) interruptible rates; 6) load management techniques; 7) master metering; 8) automatic adjustment clauses; 9) information to consumers; 10) procedures for terminating electric services; 11) advertising; and 12) lifeline rates. For gas utilities they are: 1) procedures for terminating natural gas service; and 2) advertising.

PSC has been allocated $200,000 in federal funds available under the Act to aid in fulfilling the added responsibilities mandated by the Act.

To date, PSC has adopted final rules governing termination of electric and natural gas service, master metering, and information to consumers. The rules on termination of service outline the conditions under which service may be discontinued and the notification procedure that must be followed. According to the Commission's proposed rules, master-metering electric service in new buildings is largely prohibited. The rules on information to consumers require electric utilities to supply their customers with applicable rate schedules when they commence service and annually thereafter; in addition, information must be given on previous consumption levels and proposed rate increases.

5.12.4. NATURAL GAS SUPPLY

The increasing cost of Canadian natural gas to Montana Power Company (MPC) prompted the Commission to review MPC's natural gas sources and acquisition policy late in 1980. Some of the areas being considered are: 1) current natural gas reserves and the deliverability that can reasonably be anticipated during the period 1979-1983, for each field in the MPC system; 2) estimated reserves and deliverability of fields not yet in the system but under contract to MPC; 3) current acquisition policy with respect to new gas purchases, price (Canadian, other), gathering, processing, the need for take or pay provisions; 4) a prudent gas supply mix or a range of alternative mixes designed to assure adequate long-term supply at reasonable cost, recognizing market variables; 5) an analysis of the flexibility in the Alberta and Southern contract (one of MPC's major Canadian gas contracts) with respect to minimum takes, makeup provisions and periods, ability to terminate and conditions of termination, possible reduced or renegotiated take provisions, and any adverse results of exercising options; and 6) evaluation of the sales market under conditions of rapidly escalating Canadian and domestic prices, including (a) the probable level of industrial conversion from gas to other fuel sources, and the estimated time frame; (b) the cost-of-service impact of industrial conversion on the remaining customers and customer classes, assuming various percentages of industrial conversion; and (c) the impact of substantial market reductions on exploration and acquisition, take or pay contracts, and wellhead pricing.

5.13. DEPARTMENT OF REVENUE

The Department of Revenue administers most of the state's tax programs. Energy-related taxes include the coal severance tax, the coal gross proceeds tax, the oil and gas producers severance tax, the oil and gas net proceeds tax, the resource indemnity trust tax, the electrical energy producers license tax, the gasoline distributors license tax, and the special fuel tax. Energy-related tax incentives include income tax credit and property tax exemption programs for installation of a renewable energy system, and income tax deduction for energy conservation measures. The structure and essential features of each tax or program are summarized in Sections 4.1.4. and 4.1.5.

Although the Department of Revenue is primarily concerned with tax collection and accounting, the energy conservation and alternative energy incentive programs require new regulations to define the types of energy systems, materials and equipment that qualify for tax deductions or credits. For example, in new construction, deductions are allowed only for expenses incurred in excess of what is required to meet established building standards. Tax credits are not allowed for investments in production or in rendering a service to customers.

The two programs have been in effect for three tax years. The Governor has publicized the programs and DNRC's Energy Division prepared a 1980 brochure, **11 Energy Saving Laws**, which describes the two programs and the procedures required to claim either deductions or credit. The Energy Division entered into an agreement with the Department of Revenue to acquire statistical information on the alternative energy systems and conservation measures that have been adopted and claimed. For the 1978 tax year, 22,248 returns claimed the conservation deduction and 593 returns claimed the alternative energy system credit.

5.14. DEPARTMENT OF STATE LANDS

The Department of State Lands (DSL) performs its duties under the direction of the Board of Land Commissioners, which is composed of the Governor, the Superintendent of Public Instruction, the State Auditor, the Secretary of State and the Attorney General. The Board exercises general authority over the administration of laws relating to state land, including the management and disposition of the lands and the administration of funds arising from the use and leasing of those lands.

Under the Board's direction, DSL's primary duties are day-to-day management of state lands and administration of Montana's mining statutes. Accordingly, the Department is organized into a Land Administration Division, a Reclamation Division and a Centralized Services Division. The Land Administration Division oversees the leasing, exchange, improvements, and overall management of state-owned lands.

In administering Montana's mining statutes, the Reclamation Division processes permit applications for new mines. On receipt of a complete application, the Division conducts a thorough study of the applicant's mining and reclamation plan before recommending approval or denial of a permit. Since passage of the Montana Strip and Underground Mine Reclamation Act in 1973, the 12 coal companies listed in Table V-8 have received permits. Performance bonds on coal mines in Montana, as of December 1979, totaled $70,830,680. In 1979 32,453,702 tons of coal were mined in Montana.

Currently DSL is evaluating permit applications for the extension of two existing mines—Western Energy Company and Decker Coal Company. In addition, several other companies have indicated that they will probably submit permit applications within the next two years. Potential new coal mines are listed in Table III-1 in Section 3.1.1.

TABLE V-8
EXISTING MONTANA COAL MINES
(December 31, 1979)

Company	Total Acreage Permitted (to nearest acre)	Total Bond	1979 Production (tons)
Big Horn County			
Decker (East)	4,378	$ 8,200,000	5,897,433
Decker (West)	3,205	6,950,000	7,067,372
Spring Creek	2,938	9,999,247	0
Westmoreland	2,157	6,464,000	4,949,759
Rosebud County			
Western Energy	5,666	16,048,801	11,725,558
Peabody	2,351	22,489,553	2,457,633
Richland County			
Knife River	565	391,995	305,143
Musselshell County			
Divide	43	33,500	9,464
P.M.	100	108,000	10,749
Powder River County			
Coal Creek	32	64,000	29,876
Carbon County			
Beartooth	110	42,084	715
Blaine County			
Warburton	10	14,500	0
Custer County			
Hathaway	17	25,000	0
TOTAL	21,572	$70,830,680	32,453,702

SOURCE: Department of State Lands.

5.14.1. FEDERAL SURFACE MINING REGULATIONS

Montana's proposed coal mining regulatory program was submitted by DSL to the federal Office of Surface Mining (see Section 7.2.6.) in August 1979, and was conditionally approved by the Secretary of the Interior in April 1980. This program explains how DSL will meet the state program requirements of the 1977 federal Surface Mining Control and Reclamation Act, which is summarized in Section 7.2.6.1.

5.14.1.1. STATE COMPLIANCE WITH FEDERAL REGULATIONS

Montana's position is more advanced than that of many other states because the state's strip mine reclamation law and accompanying regulatory program already contain most of the essential features required by the federal legislation. These are: 1) a law

that regulates coal mining in accordance with the federal act, including civil and criminal sanctions for violations and an effective permit system; 2) a regulatory authority to regulate coal mining; 3) a process for designating areas unsuitable for mining; 4) a process for avoiding duplication in review and issuance of permits; and 5) regulations consistent with the federal regulations.

Montana's Strip and Underground Mine Reclamation Act (see Section 4.1.1.4.) was extensively revised by the 1979 Montana Legislature so that DSL could administer the federal act. In addition, DSL amended its coal mining rules to make them consistent with those adopted by the federal Office of Surface Mining (OSM).

Although Montana has been responsible for surface mining regulation in the state since 1967, its authority over mining activities on federal land is pursuant to a special cooperative agreement with the Department of the Interior. A cooperative agreement is now being negotiated with OSM to complete final implementation of Montana's program. The federal agencies retain certain areas of authority mandated in federal laws and approve mining plans in specified areas of concern, but the state will function as the primary governmental contact with mining operators.

The federal Surface Mining Act provides grants to help states administer and enforce the federal Act and to develop state programs. DSL has prepared a State Abandoned Mine Land Reclamation Program and has received grants to conduct abandoned mine reclamation work in five areas of the state. This program includes a survey of all abandoned mine areas in the state.

Montana also received a grant from OSM in 1979 to help develop a program for designating lands unsuitable for mining. The grant is being used to develop a data base and inventory system that will allow DSL to evaluate the capacity of different areas in Montana to support surface coal mining operations and permit reclamation.

DSL has also established a Small Operator's Assistance Program under a grant from OSM. Through this program, qualified mine operators can get assistance in meeting certain environmental requirements.

5.14.2. NORTHERN POWDER RIVER BASIN ENVIRONMENTAL IMPACT STATEMENT TEAM

The Northern Powder River Basin Environmental Impact Statement Team evolved from state participation in the Northern Powder River Basin regional and site-specific environmental impact statements.

Coal mining in Montana has been concentrated primarily in a 7,500 square-mile area in the Tongue and Powder river basins. The future of coal strip mining and related industrial activity in the region has been the subject of several environmental impact statements (EIS's) prepared by the Team. The regional EIS, which covered the cumulative impacts of two proposed new mines, one mine expansion, and two new power generating units at Colstrip, was prepared in cooperation with the Department of the Interior and was one of 10 regional coal studies.

The final Northern Powder River Basin Regional EIS was published in January 1980. Subsequently the Team completed a final environmental analysis of an extension of the West Decker and Westmoreland Mines and a draft analysis of the extension of Western Energy's Area B. In process now are the final analysis for Area B and an addendum to DSL's 1977 statement on the expansion of Western Energy's areas A and E.

In September 1979, the Team was assigned to DSL. Its current function is to write a variety of multidisciplinary EIS's ranging from coal mining to shopping centers. Funding comes from Montana Environmental Policy Act fees. With its staff of specialists, the Team synthesizes existing data and obtains primary information from consultants as necessary. The Team works closely with federal and state agencies and private industry, incorporating current regulations so as to advance the "state of the art" in preparing EIS's in a timely and economic fashion.

The Team is now beginning preliminary work on EIS's for four anticipated mine permit applications: Peter Kiewit Sons' CX Ranch; Consolidation Coal's CX Ranch; Montco's Nance Mine; and a possible application from the Anaconda Company for a hard rock mine in the Stillwater Area.

5.14.3. COAL LEASING

Montana is presently cooperating with the U.S. Bureau of Land Management (BLM) on coal lease tract delineation. Approximately 200 potential state lease tracts were identified through surface evaluations in 1975-76. The Montana State Geologist's Office is conducting drilling and mineral evaluations of state tracts in order to estimate coal reserves and delineate potential state lease tracts.

The state has 96 coal leases covering 51,387 acres, but at present only six of these leases are producing. As of December 1979, Decker Coal Company had five of these six producing leases, involving 1,280 acres, and Westmoreland Resources had one 640-acre lease.

The state of Montana is represented on the Fort Union and Powder River Regional Coal Teams, and DSL is assisting the BLM in its planning (see Section 7.2.2.1.) before recommending additional state coal leases to the Board of Land Commissioners.

5.14.4. OIL AND GAS LEASING

Lease sales are held quarterly by the Board of Land Commissioners and are based on competitive oral bids. Preliminary environmental reviews are prepared for all lease tracts to identify adverse impacts that may occur and to determine stipulations that must accompany the leases. As of June 30, 1980, there were 8,269 state oil and gas leases, covering 3,636,882 acres. This represents a 27 percent increase from June 1979. Since much of the 1980 drilling is not yet completed, the total number of producing leases remains about the same as in June 1979 — 260 producing leases.

5.14.5. GEOTHERMAL LEASING

The Board of Land Commissioners has authority to lease state lands containing geothermal resources. As of October 1980, 43 applications for geothermal leases had been received. The state's efforts to encourage geothermal development are discussed in Section 5.10.2.4.3.

5.14.6. URANIUM PROSPECTING IN MONTANA

To prospect for uranium in Montana, a company must hold a valid prospecting permit as required under the Strip and Underground Mine Reclamation Act (see Section 4.1.1.4.). Companies also must have an adequate bond to cover all disturbance caused by these exploration activities.

Currently, 18 companies are permitted to conduct uranium prospecting in 19 Montana counties, ranging from Mineral in the west to Carter in the east. These activities involve 490.8 acres (4,908 drill sites).

Since June 1977, 54 uranium prospecting permits have been issued, though only 37 of these permits are active at present. Permits are issued to each company for each county in which prospecting activity takes place.

The most extensive exploration is taking place in Carter County, where six companies are conducting uranium operations. Carter County contains 3,290 permitted drill sites on 329 acres.

Kerr-McGee Corporation, with 1,827 permitted drill sites in Carter County, has the largest uranium exploration operation in Montana.

5.15. UNIVERSITY SYSTEM

Several units in the Montana University System are currently involved in energy-related research projects. This research is summarized here.

5.15.1. UNIVERSITY OF MONTANA

The University of Montana (UM) has a long history of energy-related research. Its studies are conducted by the Wood Chemistry Laboratory, the School of Forestry, the Department of Geology, the Environmental Studies Program, the Environmental Studies Laboratory, and the School of Business Administration. Current funds from grants and contracts for energy-related research are approximately $1 million a year. In addition, UM has an active program in water-related research through the Montana University Joint Water Resources Research Center (see Section 5.15.4.). Current studies emphasize the energy value in wood and destruction of that resource by forest fires. In the environmental area, UM has researched the potential impact of coal-fired electric generating plants and reclamation of surface mining properties. Sociologists at UM have studied value issues in resource development, and UM geologists have investigated the state's uranium and coal mining potential. The Bureau of Business and Economic Research is conducting studies of forest products and other energy sources and their relation to the economic well-being of the state and the region.

5.15.2. MONTANA STATE UNIVERSITY

Energy-related research at Montana State University (MSU) covers three major areas. First, the coal research program includes coal characterization, liquefaction, combustion and advanced power systems (MHD). Reclamation, transportation, water resources, environmental studies, and socio-economic impact studies are central to this research. Second, the biofuel research program emphasizes biogas and ethanol production from agricultural biomass. An important adjunct to this research is by-product (food) research involving Montana cereal grains and other crops. Third, projects on fuel cell technology, solar and wind energy, and geothermal potential are in progress. More than half the MSU research centers on the energy problems of Montana and the region.

5.15.3. MONTANA COLLEGE OF MINERAL SCIENCE AND TECHNOLOGY

Energy-related research at the Montana College of Mineral Science and Technology (Montana Tech) can be considered under three headings: geological, coal and other.

Geological research is conducted by the Montana Bureau of Mines and Geology and deals with the hydrology of coal lands, coal mining areas and coal reclamation sites. Also being investigated are the characteristics of coal deposits. This involves considerable drilling, as well as recovery and analysis of the cores produced.

Coal research is largely funded by the MHD Division of DOE. It deals with coal preparation, mostly drying studies, and the development of rapid analytical methods for coal analysis and characterization. A fluid bed dryer is being operated to collect engineering data. Through the Montana Mining and Mineral Resource Research Institute, with federal Office of Surface Mining support, work is beginning on the use of fly ash to control leachate contamination from tailing ponds, and on metal-organic affinities in Fort Union coal.

In addition, geothermal exploration is being pursued by the Montana Bureau of Mines and Geology and by the Geophysical Engineering Department. Work at Warm Springs and in the Bitterroot Valley is in progress. Also continuing is a program on heat exchanger materials. Currently compressive creep studies and rupture strengths of candidate refractory materials are being measured in conjunction with microstructural evaluation. This work is also supported by DOE MHD funds. Some uranium geochemistry work supported by the Los Alamos Scientific Laboratories is being completed.

5.15.3.1. MONTANA BUREAU OF MINES AND GEOLOGY

The Montana Bureau of Mines and Geology is a department of Montana Tech. The Bureau is responsible for investigating and reporting on the geology and mineral resources of Montana. Through its research, reports, and information services, the Bureau contributes to the orderly development and use of the state's mineral, fuel, and groundwater resources.

The Bureau's Hydrology Division investigates and evaluates Montana's groundwater resources. Current programs include monitoring water wells and managing the state's computerized water-data bank; mapping groundwater-resources, coal field hydrogeology and hydrogeochemistry, evaluating aquifers, and assessing geothermal resources.

The Bureau's Energy Division investigates and evaluates Montana's coal resources, performs basic compilation and stratigraphic studies of oil and gas resources, evaluates coal resources by drilling for the U.S. Geological Survey and state of Montana regulatory agencies, and maintains an energy information service. One project just completed is a fossil fuels map of Montana, showing coal areas, strippable coal areas, coal mines, oil shale, oil fields, gas fields, oil refineries, and oil and gas pipelines on a 1:1,000,000 scale. Another project will be to compile a map of coal, oil, gas, oil shale, uranium, thorium, geothermal, and electrical resources on a scale of 1:500,000.

The Economic Geology Division: compiles basic geologic and mineral commodity information for Montana; does research in specific districts and on selected commodities; provides direct technical assistance to small-mine operations; compiles and publishes an annual mining directory and summary of geologic research in progress; and conducts geologic hazard investigations.

The Analytical Division: provides high quality water-sample analyses; elemental analyses and fire assays on rocks, minerals, and ores; and coal-characterization analyses.

5.15.4. MONTANA UNIVERSITY JOINT WATER RESOURCES RESEARCH CENTER

The Montana University Joint Water Resources Research Center is one of 54 such research institutes located in all of the 50 states. Established by the Water Resources Research Act of 1964, it operates as a federal-state partnership for the purpose of conducting research and providing information to agencies and private firms that supply water for agriculture, industry, energy and recreation in Montana. The Center, headquartered at Montana State University, carries out its research cooperatively with the University of Montana and the Montana College of Mineral Science and Technology.

The Center is currently involved in two water projects that focus on potential power generation in Montana and on energy conservation in the state. The first, completed in July 1980, is an interstate study sponsored by DOE and titled "A Resource Survey of Low-Head Hydroelectric Potential — Columbia River Basin/Idaho, Oregon, Montana and Washington." Potential sites for small-scale hydroelectric facilities in the Columbia River drainage were assessed. Approximately 50 sites were found eligible for further study, and their potential annual energy output was estimated. The study clearly indicated that small-scale hydropower facilities will not be a major factor in Montana's energy picture, though such facilities may be significant in supplementing other sources of energy in the state.

The second project examines the efficiency of pumped irrigation systems in Montana. Forty-two pumped irrigation systems were selected at random for evaluation of power requirements, water delivery rates and piping efficiencies. The results of this study are being used to develop recommendations for designing irrigation systems to conserve energy, and to develop irrigation practices that conserve energy and water.

Another project uses the water resources management simulator to develop a management program for the upper Madison River above the Montana Power dam at Ennis Lake. The project will encourage public input and cooperation among the Montana Power Company, Montana Department of Fish, Wildlife and Parks, the U.S. Forest Service, the Montana Department of Health and Environmental Sciences, DNRC, and irrigation and recreational interests. The goal is to optimize the release of water from Hebgen Dam for power generation in the upper Missouri, subject to irrigation, recreation and water quality constraints.

The Center prepared an annotated bibliography on the impact of synfuel development on water resources as part of a comprehensive bibliography on all aspects of synfuel developments (see following section). Center projects indirectly related to energy development in Montana include: studies of the effect of selective placement of overburden from strip mining operations on soil and hydrology; the character of contamination in water used for transporting coal in slurry pipelines; and surface and groundwater problems associated with strip mining.

5.15.5. FORD FOUNDATION STUDY

In April 1978, the state of Montana received a grant from the Ford Foundation to further develop the state's siting policy and to encourage cooperation between state government and personnel of the state university system on policy development issues. An Environmental Management Coordinating Committee, directed by the Lieutenant Governor and the Commissioner of Higher Education and composed of state agency and university personnel, was established to define specific problem areas where statewide environmental policy formulation is required. The Committee was responsible for directing the work of joint agency-university task groups on short-term policy projects in a variety of environmental areas.

By the fall of 1980, the following projects had been completed and final reports submitted to the Ford Foundation: 1) an analysis of the statutory authority and regulatory framework that affects Montana siting decisions; 2) a review of other states' attempts to develop and apply siting criteria; 3) a methodology for forecasting Montana's energy needs; 4) an evaluation of available public participa-

tion programs for developing and applying siting criteria; and 5) a methodology for weighing individual siting criteria.

The final portion of the Ford Foundation grant was awarded in May 1980 to an interdisciplinary team, composed of personnel from the University of Montana and Montana State University, to review and evaluate the existing technical literature on synthetic fuel derived from coal. This review has produced an annotated bibliography of over 250 documents as well as narrative summaries that evaluate the adequacy of existing research to predict the potential impacts of synthetic fuel facilities in Montana. The findings of this study are organized in the following categories: technologies, air quality, human health, economics, social impacts, and water resources.

As a follow-up to the literature review, the state has contracted with the authors to produce an executive summary highlighting the key findings and conclusions and identifying the state's options in terms of new legislation, policies, intergovernmental relations, and further technical research.

REGIONAL GOVERNMENTAL ORGANIZATIONS AND ENERGY

6.1. WESTERN GOVERNOR'S POLICY OFFICE

The Western Governor's Policy Office (WESTPO) is an independent organization of the governors of 11 intermountain and high plains states: Alaska, Arizona, Colorado, Montana, Nebraska, Nevada, New Mexico, North Dakota, South Dakota, Utah and Wyoming. WESTPO was created by the governors in September 1977 to serve as a regional forum and to strengthen the policy management capacity of state governments, particularly in relation to the federal government and multistate institutions in the western region. The governors are assisted in developing regional policies and programs by the WESTPO Regional Coordinating Council, composed of the governors' executive assistants. Staff advisory committees composed of key state personnel address five primary functional areas: energy, water, agriculture, natural resources and human resources. WESTPO provides staff support to the WESTPO Regional Energy Advisory Board, established in 1978 by Section 655 of the U.S. Department of Energy Reorganization Act of 1977. WESTPO also provides management assistance to DOE Region VIII for its Appropriate Technology small grants program.

Current WESTPO activities include monitoring significant energy-related legislation, such as bills providing for the Energy Mobilization Board, the Synthetic Fuels Corporation, slurry pipeline rights-of-way, windfall profits tax, and limitations on state coal severance taxes. In 1979 WESTPO governors met several times to discuss the President's efforts to free the nation from its dependence on foreign oil, including the proposed synfuels development program.

In July 1979, the governors approved a "Four-Point Affirmative Action Plan for Energy Self-Sufficiency." The plan calls for: 1) a "phased" rather than a "crash" approach to synthetic fuels; 2) increased reliance on renewable resources and "fast-tracking" conservation; 3) federal assistance to boom-towns and other areas affected by energy development; and 4) more effective machinery for intergovernmental policy-making and management.

At their 1979 annual meeting, WESTPO governors agreed to explore opportunities for exporting steam coal from western states to Japan and Taiwan.

In early 1980, WESTPO initiated a study of the cumulative impact of major public works, energy development, and national security investments in the West. The study will include an inventory of existing and planned energy extraction and conversion facilities; a summary of state and federal projections for energy production in the West for 1980, 1985 and 1990; an assessment of present and projected water resources; an inventory of military base openings in the WESTPO states; and a description of recent federal legislation affecting energy extraction, conversion and transportation, particularly legislation that has shifted authority or responsibility from the states to the federal government.

6.2. WESTERN INTERSTATE ENERGY BOARD/WESTERN INTERSTATE NUCLEAR BOARD

The Western Interstate Energy Board/Western Interstate Nuclear Board is an organization of 16 western states (including Montana) with one Board member from each state, appointed by the Governor. The Board, which is state funded and is legally based on the Western Interstate Nuclear Compact, takes an interest in all issues relating to energy conservation and development.

The Board's responsibility has been primarily to establish a state-federal partnership on energy issues. A principal focus in the past two years has been the new federal coal management program developed by the U.S. Department of the Interior. The Board's staff and a committee of state officials from the six major coal-producing states of Montana, Colorado, North Dakota, Wyoming, Utah, and New Mexico have cooperated with Interior officials in writing and implementing the federal coal management program (see Section 7.2.2.1.), which provides for continuous input from the governors.

Other recent activities of the Energy Board include:

—assisting Bureau of Land Management agencies in establishing procedures for joint state/federal action on energy corridors;

—assisting the major western coal states in representing their concerns about coal mine reclamation to the U.S. Office of Surface Mining;

—working toward a regional solution to the problem of low-level radioactive waste disposal;

—exchanging information among the states about emergency plans to deal with fuel shortages;

—reviewing regulatory problems in energy projects and conservation programs;

—assisting the western states during the 1979 fuel shortages in collective recommendations to DOE about supply problems resulting from federal fuel allocation rules;

—participating in the establishment of Western SUN, the western regional solar energy center (see following section).

The Board has also been involved in uranium mining and milling issues, geothermal development, new performance standards for coal-fired power plants, synthetic fuels development, the West Coast "oil surplus" and related transportation issues, state electrical energy forecasting, and coordination of federally-financed, state-operated energy conservation and solar programs.

An important function of the Board is to warn the member states of forthcoming federal energy initiatives in time to allow them to respond. This is accomplished through a biweekly newsletter, staff analyses of specific policy issues, and special reports distributed to over 200 state government agencies.

6.3. WESTERN SOLAR UTILIZATION NETWORK

Regional planning for solar energy development, a move away from centralized federal solar activities, began in April 1977, when the Energy Research and Development Administration (now DOE), in connection with the National Solar Energy Research Institute (SERI), invited the 50 states to form regional solar commercialization organizations. This proposal led to the development of the Western Solar Utilization Network (Western SUN), one of four regional solar energy centers funded by DOE. Its purpose is to design and initiate programs to increase public awareness, acceptance and use of solar technologies in the 13-state region that includes Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming.

Western SUN is composed of a board of directors appointed by the governors, a central office staff based in Portland, and solar officers in each state to carry out Western SUN's field activities. (See Section 5.10.2.4.2. for a description of the Montana State Solar Office.)

The Portland office staff plans, implements and manages projects contracted to organizations throughout the west. Western SUN's current projects include the following passive solar applications: design/build competitions; instructional materials for builders' workshops; analysis of building costs; consumer education programs; university and college directories; and low-cost, owner-operated monitoring systems. Active solar heating projects include data on existing installations, state-specific homeowner guides, financing installations through publicly-owned utilities, and workshops and training sessions. Other projects identify existing industrial solar programs and industrial users' requirements, analyze consumer protection laws, and develop industrial cost information. In the field of wind-energy conversion, Western SUN produced a consumer guide, programs for manufacturers and distributors, and resource assessments; in the wood-combustion area, bibliographies on consumer protection and on air quality and combustion efficiency, resource assessments, and analyses of deterrents and incentives.

Western SUN is currently preparing Climate Data Books — climate maps and manuals for each state in the region. A Solar Education Curricula Evaluation Guide and a Homeowners Decision-Making Guide will be available soon for distribution in the region. In addition, a Solar Installation Count project is underway. The count will provide the baseline data essential to an evaluation of Western SUN's impact on commercialization. Western SUN also sponsored an intensive two-day conference in September 1980 for engineers, architects, builders, installers, lenders, homeowners, government officials, manufacturers, and developers of solar technologies, featuring state-of-the-art solar development in the western states, with practical presentations on the design, construction, maintenance, and cost of solar projects.

6.4. OLD WEST REGIONAL COMMISSION

The Old West Regional Commission (OWRC) was established in 1972 under the Public Works and Economic Development Act of 1965 to formulate and carry out coordinated action plans for regional economic growth and development. Montana, Nebraska, North Dakota, South Dakota and Wyoming comprise the Old West region, and the Commission consists of the governors of these five states. OWRC's energy program assists state and local governments in coping with the impacts of energy development. Funds have been provided for public service personnel to meet enlarged community requirements and for demonstrating how to minimize the enviromental effects of energy development on water, land and air quality.

The OWRC cooperated with Argonne National Laboratory and DOE in providing Indian tribes in the region with a third program on resource development during the summer of 1980. Students from Montana tribes participated. These programs provided basic theory on energy, ecology and the environment.

The Commission's Community Technical Assistance Program was continued during 1980 and has been approved for 1981. This program, administered through the states, is designed to help communities affected by energy development. The Commission has also provided funds to assist each state's energy office in meeting its needs for data on fuel availability and allocations.

In 1978, in response to the growing controversy over severance taxes levied by western states, OWRC sponsored a study of the taxation of mineral fuels, including coal, in the Old West region. The study included: 1) the history of mineral fuels taxation and a description of present taxation as a source of revenue in each state; 2) an analysis of the production costs, transportation charges, profits and taxes generated by coal development; and 3) the role of the Old West region in supplying coal for electrical generation over the next decade. The study also analyzed alternatives and competitive sources and the market outlook for each state. The final report was completed in September 1979.

In October 1980, the Commission authorized $25,000 for DNRC's participation in an interagency utility-transportation corridor planning effort (see Section 5.10.3.3.).

The Commission maintains an extensive energy data base known as the Energy Research Information System. The system includes more than 1,500 projects on various aspects of Western energy development which are entered in DOE's RECON data base. In 1980 OWRC passed a resolution asking DOE to establish a regional/national integrated energy information system based on the Commission's Energy Research Information System.

6.5. WESTERN INFORMATION NETWORK ON ENERGY

In October 1977, representatives of regional, federal and state energy information organizations and agencies organized the Western Information Network on Energy (WINE). WINE's primary purpose is to coordinate existing energy-related information with the needs of users in the Rocky Mountain region. To meet the goal of providing accurate information concerning Western energy resources, production, and distribution to individuals, industry and government agencies, WINE identified the following initial tasks: 1) developing a directory of regional, state, and local information sources; 2) identifying gaps in available energy information; 3) developing educational programs; and 4) publishing a newsletter to maintain contacts within and outside of WINE.

A key strategy of the organization is to prevent duplication of energy information and dissemination programs and at the same time develop quality information.

A seven-member executive committee directs the organization's activities. One representative from each of the following areas serves on the committee: Central Rockies (Colorado, Utah, Wyoming); Midwest (Nebraska, Oklahoma, Texas); Northern Rockies (Idaho, Montana, North Dakota, South Dakota); Southern Rockies (Arizona, Nevada, New Mexico); and Western (Alaska, California, Hawaii, Oregon, Washington). Montana members of WINE include the Old West Regional Commission, the National Center for Appropriate Technology, the Montana State Library, the Department of Community Affairs, and the Department of Natural Resources and Conservation.

WINE members and other interested individuals meet once a year to discuss energy information topics of regional concern. The 1980 meeting was held October 2-3 in Berkeley, California.

6.6 MISSOURI RIVER BASIN COMMISSION

The Missouri River Basin Commission (MRBC) was established by Presidential Executive Order in 1972 at the request of the governors of the 10 states located in the Missouri River drainage. The Commission serves as the principal coordinator of federal, state, regional and local plans for developing water and related land resources in the Basin. Commission operations are jointly funded by the 10 states and by federal appropriations allocated through the U.S. Water Resources Council.

The Commission prepares an annual report on the status of electric power in the Missouri River Basin, including information on future needs and potential means for meeting these needs. The report highlights current research and development and discusses environmental studies related to power production and energy development.

The Commission has several committees that recommend policies, planning procedures, priorities for federally-funded water programs and projects, and special undertakings such as the studies described below.

6.6.1. YELLOWSTONE BASIN AND ADJACENT COAL AREA LEVEL B STUDY

The Missouri River Basin Commission sponsored the Yellowstone Level "B" Study to identify a set of management alternatives for developing and conserving the water and related land resources of the area. The study, completed in 1978, identifies the appropriate agencies to complete more detailed feasibility studies and recommends that some projects and programs be implemented subject to the satisfactory completion of appropriate Level C (preconstruction) studies. The study urges that enough water be left as instream flows to sustain aquatic organisms without significant long-term reduction in water quantity and quality.

6.6.2. UPPER MISSOURI RIVER BASIN LEVEL B STUDY

The Upper Missouri River Basin Level B Study is a comprehensive study of the water and land resources in the Missouri River Basin, similar in purpose and design to the Yellowstone Basin Study described in the previous section. The study began in 1978, and a draft report is now being reviewed by state and federal agencies. This final report should be available late in 1980.

During 1979, base conditions were defined and future problems and requirements were projected. Inventories were completed for ground and surface water resources, land use, and municipal, industrial, and rural domestic water supply. Estimates were made of future water quality, energy water use, flood damages, and agricultural water use. Future requirements were identified for fish and wildlife, environmental quality, outdoor recreation, and land and water conservation.

Existing and projected economic and agricultural conditions, as well as state and federal programs, were analyzed, and a computer program was prepared to analyze the effects of proposed programs on current and future streamflow. The base year used for analysis was 1975, with a near-term analysis period running through 1990 and a mid-term analysis period through 2000.

The DNRC Energy Division prepared the section of the study concerning estimated energy water requirements. This included a determination of existing water use by the energy industry, the estimated future potential for development, and estimated future water requirements for energy generation and cooling. Other cooperating agencies include DNRC's Water Resources Division, Montana Power Company, Water and Power Resources Service, Federal Energy Regulatory Commission, Army Corps of Engineers, Soil Conservation Service, and Bureau of Land Management.

6.6.3. UPPER MISSOURI RIVER BASIN WATER AVAILABILITY ASSESSMENT FOR COAL TECHNOLOGY REQUIREMENTS

This assessment was authorized under Section 13(a) of the Federal Non-Nuclear Energy Research and Development Act of 1974, and was conducted by participating states, federal agencies and a consultant under the leadership of the Missouri River Basin Commission. The assessment was prepared for the U.S. Water Resources Council as part of a water assessment report published in draft form in 1979.

The area considered by the assessment was the Yellowstone River Basin and adjacent coal area plus an assessment subarea in western South Dakota.

The purposes of the assessment were to analyze the available supply of water for developing new coal technologies, to assess the implications of such development for the area's water and related land resources, and to evaluate water-related constraints on coal development.

The assessment was conducted using two "target" years — 1985 and 2000. The basis for estimating and broadly quantifying water constraints on coal technology development was contained in scenarios provided by the U.S. Water Resources Council, DOE, and the Missouri River Basin Commission.

The study concluded that the levels of energy development projected for the assessment could be accommodated in the assessment area, that limited water availability is a problem of distribution rather than quantity, and that new storage, interbasin transfers, changes in present water use, or ground water development would be required to ensure a water supply at desired locations.

Also identified in the assessment were possible adverse impacts on regional ground-water quality through an increase in the concentration of total dissolved solids and other dissolved minerals, particularly sulfate. Of the three water supply alternatives analyzed in the assessment, it was determined that the least costly (water from the nearest available source) would have the greatest impact on fishery resources. The assessment found that disturbance of vegetation by water delivery system construction would be one of the most apparent terrestrial impacts associated with energy technology development. Public objections to energy development were noted, including concerns about air quality, waste disposal, strip mine reclamation, water requirements, and financing new community facilities and services.

6.6.4. WESTERN COAL PLANNING ASSISTANCE PROJECT

The Western Coal Planning Assistance Project (WCPAP) was initiated by the Missouri River Basin Commission and the U.S. Geological Survey's Resource and Land Investigations Program in September 1977. The project encompasses the major coal areas of Montana, North Dakota, and Wyoming.

The objectives of the first phase of the project were: to determine the technical and informational needs of state and local planners and decisionmakers for assessing coal development alternatives; to develop analytical tools for responding to legislative, societal, economic, and physical constraints; and to conduct planning-assistance workshops with regional, state, and local planners and decisionmakers.

To provide a basis for state and local governments to influence and deal with coal and energy development, WCPAP developed a Planning Reference System for state and local planners and decisionmakers and assessed current planning problems and needs in the three states, conducting one workshop in each state. The Planning Reference System includes four source books: **The Fact Book for Western Coal/Energy Development; A Guide to Methods for Impact Assessment of Western Coal/Energy Development; Forecasts for Western Coal/Energy Development;** and **Source Book for Western Coal/Energy Development.**

High-priority objectives identified in the problems and needs survey include: 1) better coordination among planning entities; 2) developing improved analytical tools and models for topics such as local population forecasts and growth management techniques; 3) providing training and technical assistance in modernizing fiscal procedures and in interpreting technical data on environmental impacts; 4) improving data on water quality and quantity; 5) better monitoring of cumulative environmental impacts of coal or energy development; 6) improved gathering, recording, and reporting of social and economic data; and 7) additional research on the consequences of local growth decisions for nearby communities.

WCPAP's project area was expanded in the second phase to include all the states in the Missouri River Basin. Activities during this phase included workshops and special training sessions in the use of the Planning Reference System, and supplementing the Planning Reference System to increase its utility in the Missouri River Basin. WCPAP ended in October 1980.

6.7. PACIFIC NORTHWEST RIVER BASINS COMMISSION

The Pacific Northwest River Basins Commission (PNRBC) was established in 1967 under terms of the 1965 Water Resources Planning Act at the request of the governors of Idaho, Montana, Oregon, Washington and Wyoming. The Commission coordinates federal, state, interstate, and other plans for developing water and related land resources in the region. The Power Planning Committee of the PNRBC reports annually on the economics of federal hydro projects and coordinated operation of power systems in the Pacific Northwest. The report also summarizes energy-related activities in the region during the year, including research and development projects. DNRC is represented on this committee.

In 1979 the Commission agreed to assist the U.S. Water Resources Council in assessing the potential impact of committing water to energy production. As a state study member of the Pacific Northwest River Basins Water Accounting Unit, DNRC is currently taking part in the task of estimating the practical supply potential for emerging energy technologies such as low-head hydro, geothermal and cogeneration. Coal technologies and their potential water use have not been emphasized in this study.

6.8. MOUNTAIN PLAINS FEDERAL REGIONAL COUNCIL ENERGY IMPACT OFFICE

The Mountain Plains Federal Regional Council (MPFRC), located in Denver, Colorado, serves the six states comprising Region VIII—Montana, Colorado, Utah, North Dakota, South Dakota, and Wyoming. The MPFRC's main purpose is to promote coordination of the activities and programs of local, state and federal agencies.

The MPFRC has been working on ways to help small western communities cope with the socioeconomic impacts of energy development. Communities experiencing energy-related growth are forced to provide additional community facilities and services. The MPFRC established an Energy Impact Office in 1978 to provide technical assistance, coordinate federal, state and industrial impact assistance efforts, analyze impacts of new policy proposals, and serve as an initial source of information and assistance for state and local officials applying for federal programs.

The Energy Impact Office has worked with energy-impacted communities in Montana for more than two years. The first Energy Impact Team in the state was established in Sidney, and numerous cities and counties were aided in obtaining federal funds for needed community services and facilities.

The Energy Impact Office has prepared a catalog of federal-assistance programs selected for their applicability to energy-impact problems.

6.9. COUNCIL OF ENERGY RESOURCE TRIBES

The Council of Energy Resource Tribes (CERT) represents 26 American Indian tribes holding a substantial share of western energy resources. Six of the Montana tribes—Northern Cheyenne, Crow, Blackfeet, Confederated Salish and Kootenai, Assiniboine and Sioux tribes of the Fort Peck Reservation, and the Fort Belknap Reservation—are members. (Energy development plans that involve Montana's Indian tribes are discussed in Section 9.8.)

CERT provides its members with technical and legal assistance on energy-related matters, working directly with individual tribes on specific projects, and lobbies on energy issues for the tribes in Washington, D.C. Its funds come from a multi-agency federal grant and from tribal and private contributions.

CERT was formed as a non-profit organization in 1975. It has offices in Washington, D.C. and a technical assistance center in Denver. Its newsletter, **The CERT Report**, is issued semi-monthly.

6.10. PACIFIC NORTHWEST UTILITIES CONFERENCE COMMITTEE

The Pacific Northwest Utilities Conference Committee (PNUCC) is a regional planning body that addresses problems in meeting future electric energy requirements in the region. Its membership includes all of the investor- and publicly-owned electric utilities and agencies that serve customers in the West Group Area (all of Washington, most of Oregon, and parts of Idaho, California, and western Montana). The Bonneville Power Administration and the U.S. Army Corps of Engineers are represented on the committee, but are not members. Although PNUCC has a full-time planning staff and a System Planning Office, most of its functions continue to be performed through committees and task forces made up of representatives from various member utilities and state and federal agencies.

This year, as in the past three years, PNUCC has developed a long-range electric energy sales forecast using an econometric model developed especially for this purpose. The objective of this forecast is to provide an analysis of load growth in the West Group Area to compare with the planning forecast compiled by PNUCC. The econometric model provides a cross-check of the aggregated forecast published annually in the **West Group Forecast of Power Loads and Resources**.

In 1974 an expanded Policy Committee of PNUCC was organized to coordinate regional development of large thermal power facilities. Starting in 1976, this activity evolved into a highly organized, concerted effort to develop legislation designed to meet the region's future electric power needs after the mid-1980's. This legislation is discussed in Section 10.8.

FEDERAL AGENCIES

ENERGY—RELATED PROGRAMS

7.1. DEPARTMENT OF ENERGY

The U.S. Department of Energy (DOE) was established in 1978 to consolidate the various energy activities dispersed throughout the federal government. Principal functions transferred to the department include those previously undertaken by the Energy Research and Development Administration, Federal Energy Administration, and Federal Power Commission,as well as selected functions of the Departments of Interior, Navy and Commerce and the Interstate Commerce Commission. DOE now coordinates the activities of five federal power administrations including the Bonneville Power Administration (BPA) and the Western Area Power Administration (WAPA). The power marketing and transmission functions of BPA and WAPA are described in subsections 7.1.3. and 7.1.4. respectively.

DOE's Region VIII office, located in Denver, serves the states of Montana, Colorado, Wyoming, Utah, North Dakota, and South Dakota. The Regional Representative is the principal spokesperson for the Secretary of Energy within the region, working with state and local officials to relay national energy goals and regulations and, in turn, communicating regional concerns about federal energy programs to the Secretary. Many of the federally-funded energy programs described in Section 5.10.2. are administered by DOE's Region VIII office.

DOE oversees many of the programs and regulatory measures included in the Energy Security Act of 1980, the Emergency Energy Conservation Act of 1979, and the Crude Oil Windfall Profits Tax of 1980 (see Section 4.2. for descriptions of these recently enacted federal laws). The Energy Management Partnership Act, which would consolidate many state energy programs, will also be administered by DOE. In addition, DOE administers most of the programs included in the National Energy Act, which is summarized below.

7.1.1. NATIONAL ENERGY ACT

In 1978 Congress passed five major pieces of energy legislation (known collectively as the National Energy Act) which cover the following areas: energy conservation; coal conversion; utility-rate reform; natural gas pricing; and tax credits for energy-saving investments.

The energy conservation section provides for the following programs: 1) weatherization grants for insulating low-income homes; 2) annual grants to states for three years to improve the energy efficiency of schools, hospitals and municipal buildings; 3) a three-year program for installing solar heating and cooling systems in federal buildings and a program to purchase photovoltaic energy devices; 4) federally subsidized energy conservation loans to elderly and moderate income families; and 5) requiring utilities to inform their customers of suggested energy conservation and solar energy measures, with projected cost and energy saving data.

The coal conversion section prohibits use of oil or natural gas in new utility generation facilities or in new industrial boilers, gas turbines, internal combustion, and combined cycle units with a capacity greater than 10 megawatts, unless DOE grants exemptions. For existing power plants and industrial facilities, DOE may require existing coal-capable facilities, individually or in categories, to convert to coal and other fuel use, or to use coal-oil mixtures or alternative fuels. Utilities are prohibited from using natural gas after January 1, 1990. Supplemental authority to prohibit use of natural gas in small boilers for space heating is provided. A loan program also exists to assist companies to raise necessary funds for pollution control.

The public utility-rate reform section establishes 11 rate-making standards as voluntary guidelines for states to encourage conservation, including time-of-day rates, seasonal rates, cost of service

pricing and interruptible rates. State regulatory authorities and utilities must formally consider the standards within prescribed periods. DOE may intervene in state rate-making cases to raise consideration of standards.

The Federal Energy Regulatory Commission (FERC) must prescribe rules favoring industrial cogeneration facilities and requiring utilities to buy or sell cogeneration power at fair rates. FERC may require physical connections of electric power transmission facilities and order utilities to provide transmission services between noncontiguous utilities.

The natural gas section creates a single national market for natural gas. Previous regulations applied only to gas sold outside a producing state in interstate pipelines. Thus, 40 percent of the natural gas produced has been out of the reach of the interstate market, partly because of the higher prices available inside the producing state. Under the old regulatory regime, as intrastate markets became saturated, a glut developed inside the producing states, which led to an excess of approximately a trillion cubic feet of gas production annually. That gas will now be available to flow across the country into the interstate market.

Initial price increases will be applied to large industries using natural gas as boiler fuel. Increases in gas prices for homes, schools, and hospitals will be smaller. With more gas flowing in the interstate market, gas hookups for some existing homes and for new housing can be permitted, reducing the home heating load on imported oil.

The law provides for an end to price controls on new natural gas in 1985. At that time, after a moderate period, either the President or the Congress will have the authority to reimpose controls for up to 18 months.

The energy tax section provides tax credits to homeowners and businesses to encourage conservation of scarce fuels and greater reliance on energy that is more plentiful and renewable. Tax credits are allowed to: homeowners who install insulation, storm doors and windows, caulking, weatherstripping,modified flue openings, automatic furnace ignition systems, clock thermostats, and other energy-saving devices; homeowners who install solar, wind, or geothermal energy equipment; and businesses that install certain energy-saving and energy-producing equipment. In addition, a tax is levied on "gas guzzlers," beginning with the 1980 models.

7.1.2. COAL PRODUCTION GOALS

The most significant recent development in federal coal leasing policy is the new federal Coal Management Program announced by the Department of the Interior (DOI) in June 1979. In September 1978, DOE and DOI concluded a Memorandum of Understanding which requires DOE to set biennial production goals, on a resource by resource basis, for the next five, 10 and 15 years. These goals are intended to guide the Secretary of the Interior in establishing and revising coal lease planning schedules and in developing targets for lease sales by coal region. In addition, the DOE Organization Act requires DOE to establish "production objectives" for coal and other energy fuels for periods of five and 10 years. In conformity to these mandates, DOE provided DOI with coal production forecasts in June 1978 that were used to prepare the programmatic environmental impact statement for the federal coal management programs. Interim updates of the June 1978 forecasts were issued in April 1979 to assist DOI in developing the initial coal-leasing schedule.

To ensure that the coal-leasing program and the leasing targets for individual lease sales in the individual coal regions are consistent with constantly changing national and regional coal demand, supply and market conditions, the DOE once again updated its coal production goals and issued a preliminary report in July 1980. Final coal production goals for 1985, 1990, and 1995 were issued in October 1980 and supercede the previous forecasts.

DOE's coal production goals will be used by the Regional Coal Teams (see Section 7.2.2.1.) at the point of lease tract selection to ensure that enough tracts are made available to meet target production levels. DOE is working with representatives of state and local government, the coal industry, and other interests to determine the final production goals and leasing targets for each region.

DOE has developed three separate scenarios in order to analyze the full range of production possibilities for 1985 and 1990. A low western coal scenario resulted in forecasts of low national consumption and shifted regional production to the East. A high western coal scenario resulted in high national coal consumption and shifted major regional production to the West. Finally, a medium western coal scenario provided an intermediate forecast.

Table VII-1 compares DOE's coal production goals for 1985 and 1990 developed in June 1978, April 1979, and July 1980,with Montana's production forecasts for 1985 and 1990:

TABLE VII-1
COAL PRODUCTION GOALS FOR MONTANA
DOE's PRODUCTION GOALS
(million tons per year)

	Montana's Forecast[1]	June 1978			April 1979			July 1980		
		Low	Med	High	Low	Med	High	Low	Med	High
1985	81.2	49.3	86.9	89.0	61.5	77.4	93.9	36.9	63.5	120.5
1990	130.2	68.6	205.3	340.6	196.7	280.3	311.4	70.1	117.6	239.1

[1]Montana's actual coal production in 1979 was 32.5 million tons. The Montana forecast was prepared by the Department of State Lands and DNRC in May 1980.

On a national basis, the coal production goal for the medium demand scenario is 0.96 billion tons in 1985, 1.37 billion tons in 1990 and 1.72 billion tons in 1995. These goals represent a doubling of coal production from 1978 to 1990. Most of this production growth is expected to occur in the West, which accounts for approximately two-thirds of the predicted growth. Within the West, the largest growth is expected in the western Northern Great Plains region, which includes eastern Montana, Wyoming and northern Colorado. Coal production in this region is projected to nearly quadruple from 1978 to 1990 and more than quintuple by 1995 (medium demand), according to DOE. The western Northern Great Plains also is expected to account for over 60 percent of total western coal production by 1990.

7.1.3. BONNEVILLE POWER ADMINISTRATION

The Bonneville Power Administration (BPA) is an agency in the Department of Energy. It was originally formed under the Bonneville Project Act of 1937, as the marketing agency of the Department of the Interior for power generated at Bonneville Dam on the Columbia River. Since then, through administrative action and legislation, BPA has become the marketing agency for most of the federal hydroelectric power projects in the Pacific Northwest.

The federal projects are constructed and operated by other federal agencies—the U.S. Army Corps of Engineers and the Water and Power Resources Service. Bonneville Power Administration builds and maintains the necessary transmission lines and substation facilities for making electrical power from these projects available to public and private utilities and industrial customers throughout the Pacific Northwest and, subject to Northwest priorities, to customers in other adjacent regions.

Through its connections with the principal generating utilities of the Northwest Power Pool, the BPA transmission network provides the capacity and wheeling capability necessary for operating the Power Pool and for carrying out the requirements of the Pacific Northwest Coordination Agreement.

The utilities serving western Montana that buy power from BPA are the Montana Power Company, Flathead Irrigation Project, Pacific Power and Light Company, and seven rural electric cooperatives.

BPA has an area office in Kalispell, Montana. Its main headquarters is in Portland, Oregon.

7.1.3.1. ROLE ENVIRONMENTAL IMPACT STATEMENT

In mid-1974, the governors of the Pacific Northwest states requested preparation of a regional environmental impact statement on energy planning in the Pacific Northwest. The study was split into two parts. The Pacific Northwest Regional Commission funded one part called the Pacific Northwest Energy Policy Project (NEPP); BPA was responsible for the other part and in 1975 issued a publication titled, "BPA Participation in Regional Interutility Cooperation." In response to criticism that the EIS was too narrow in scope, BPA prepared and circulated an outline of a greatly expanded study that included the hydro-thermal program and other power supply arrangements. Two lawsuits filed at about this time also led BPA to expand the scope of the study. The Port of Astoria filed a suit on the location of the proposed Alumax aluminum plant, and the resulting district court decision required BPA to write an impact statement on its contract to supply electricity to the plant. The Natural Resources Defense Council filed the other lawsuit to stop BPA from signing long-term power-supply contracts without an EIS.

The resulting BPA document, issued as a draft EIS in 1977, was titled "The Role of the Bonneville Power Administration in the Pacific Northwest Power Supply System, Including its Participation in the Hydro-Thermal Power Program." The study includes a summary of the regional electric supply system and BPA's role, detailed technical information on power resources, planning and operations, transmission, and power marketing, and a supplemental EIS on the Alumax aluminum plant proposal. The impact statement is a source of information that was previously not easily available to the general public. It includes information on the way that electric generation is planned and operated in the Pacific Northwest and the role BPA plays in the region. It also provides projections of the future energy needs of the region and explores alternate ways of planning for the future.

This document triggered an animated regional debate coinciding with the debate over regional power planning legislation (see Section 10.8.). Debate focused on whether the treatment of conservation and the impacts on eastern Montana was adequate. BPA subsequently issued a revised draft EIS in April 1980 under the same title, attempting to answer some of the criticism. According to BPA, the changes "include the development of a more specific proposal and alternatives, broader consideration of regional planning, greater emphasis on conservation, and a decrease in length from over 3,000 pages to about 400 pages." Montana reviewers generally felt that their objections to the first draft were not adequately addressed in the revised draft.

7.1.3.2. ALLOCATION

In the early days of federal involvement in dam construction and electricity generation in the Pacific Northwest, a mix of municipal electric departments, public agencies and private utilities were meeting the area's demand for electricity. To justify the construction of large hydroelectric facilities it was necessary to ensure sufficient markets for the power. Therefore, BPA entered into long-term contracts with direct service industrial customers in the aluminum industry at very low rates to encourage them to invest in facilities in the region. Over the years the Corps of Engineers and the Bureau of Reclamation (now the Water and Power Resources Service - WPRS) expanded the region's hydroelectric generating capacity at a rate sufficient to meet the growing demands of BPA's customers. These customers were growing both in size and number with the formation of new rural electric cooperatives (REC's) and public utility districts (PUD's).

For a number of reasons it has been increasingly difficult for the Corps and WPRS to add new generating capacity in the region. The best sites for hydroelectric facilities have already been developed and at many of these sites the maximum feasible number of generating units have been installed. Also, as the extent of free-flowing rivers has diminished with development, and environmental awareness has increased, public opposition to new hydroelectric developments has grown. In recent years BPA has expanded its sources of supply in other ways. Since the WPRS, the Corps and BPA are not authorized to build thermal generation, BPA made exchange arrangements with its customers to facilitate the construction of thermal plants. Under these arrangements, called "net billing agreements," the output of the thermal plants is pooled with the rest of the power available to BPA, and the cost is averaged. The owners of the thermal plants are credited for the sale against the bill for the power they buy from BPA. The potential for such arrangements is strictly limited, however, since the cost of the thermal power is up to 10 times greater than the average cost of BPA power, and the credits have quickly reached the limit of the owners' bills.

Given BPA's inability to find new sources of electricity to meet the predicted needs of its customers, and given the fact that even with the thermal power averaged in BPA electricity is still far cheaper than the alternatives available to most of its

current and potential customers, it will be necessary at some point to ration the available federally-generated power among the competing customers.

In 1976 BPA estimated that by June 1, 1983, its resources would become insufficient to meet the demand. It proposed that after 1983 it would guarantee each preference customer a minimum annual allocation of either its actual load for the operating year 1982-83, less its owned resources, or a minimum allocation of 25 megawatts of federal hydropower, plus a share of other resources available to the customer from net billed thermal plants and Canadian exchanges, whichever is greater. Load growth beyond the minimum allocation would be served by a prorated share of BPA's available resources, and the customer would be responsible for finding resources to serve loads that BPA would not cover.

Approximately 45 of BPA's 115 preference customers will require further generation resources immediately on the date of insufficiency. Of the remainder, some of the smaller cooperatives will not have to look elsewhere for many years, while others will have only three or four years to make new arrangements. As discussed in Section 10.8., the electric utilities of the Northwest, BPA, and BPA's direct service industrial customers, are actively pursuing legislation that would change BPA's operating constraints and permit net billing arrangements to continue. Major issues in such legislation are: 1) retaining the cost advantage of existing federal generating resources for public agencies; and 2) the possible dilution of that advantage due to creation of new preference agencies such as new PUD's to recognition of major cities such as Portland as preference customers, and to the creation of a state agency like Oregon's that will buy power for resale to domestic and rural customers.

BPA has drawn up a series of alternative allocation policies. The impacts of the alternative plans are analyzed in a draft EIS scheduled for publication in July 1981.

7.1.3.3. COLSTRIP TRANSMISSION LINE

In June 1973, Montana Power Company (MPC) and a consortium of Pacific Northwest utilities applied for a certificate under the Major Facility Siting Act to construct two 750 megawatt coal-fired electric generators and associated transmission facilities (see Section 10.1. for further discussion). The transmission facilities—two 500 kilovolt transmission lines—were to be constructed from Colstrip to Hot Springs, Montana, a distance of approximately 426 miles. A certificate was issued which identified a corridor for the transmission line with centerline location subject to later approval. The consortium has begun to construct the transmission lines from Colstrip to a point near Townsend.

In 1977, because it was unable to reach a right-of-way agreement with the Confederated Salish and Kootenai Tribes, MPC requested on behalf of the utility consortium that BPA construct the western portion of the line because BPA had an existing right-of-way across the reservation. BPA agreed, and based on a corridor study involving several federal land management agencies, selected a route different from the one approved by the Montana Board of Natural Resources and Conservation. The BPA route diverges from the Board's preferred route near Townsend, where it runs east and south of the Elkhorn Mountains, traverses the Boulder Valley, crosses the Continental Divide west of Basin and connects with an existing right-of-way from Garrison to Hot Springs. To date, BPA has refused to recognize or comply with the Major Facility Siting Act in selecting this corridor and a centerline within the corridor.

BPA and the Western Area Power Administration (WAPA), BPA's counterpart agency in eastern Montana, are both proposing to construct transmission lines which, for the most part, have historically been nonfederal facilities. The state views this as an attempt to circumvent the Major Facility Siting Act. BPA argues that as a federal agency, it is not subject to state jurisdiction and that the procedures, regulations and criteria in the Siting Act are not applicable. The state contends that the MFSA process would better provide for the reduction of the environmental and socioeconomic impacts associated with construction of the transmission lines.

In May 1980, the state of Montana filed an amicus brief in support of a lawsuit filed by the state of Washington and other plaintiffs against BPA. Western District Congressman Pat Williams has proposed an amendment to Pacific Northwest power planning legislation that would require BPA to make payments in lieu of local taxes on the transmission lines it constructs, and the Montana Congressional delegation is also considering legislation that would explicitly place BPA under state siting jurisdiction.

Construction of the twin 500 kilovolt transmission lines has generated substantial opposition to BPA from citizens in the Boulder Valley and the Deer Lodge Valley. This opposition focuses on two principal issues. First, ranchers argue that the route unnecessarily crosses valuable pasture land and that it will increase their operating costs and lower produc-

tion to work around the transmission lines. Ranchers also claim that they were not properly informed of the route selection study and therefore had no opportunity to participate in an issue of vital concern to them.

The second issue concerns the fact that BPA, as a federal agency, will not pay local property taxes to the affected counties if it owns and constructs the line, unless the law is changed. More than $3 million per year would be lost in local taxes. This inequity is heightened by the fact that the principal beneficiaries of the project live in Oregon and Washington, while Montana will experience the adverse impacts of the transmission lines.

Due to increasing opposition to its proposed route, BPA has reopened consideration of alternate routes for the transmission line. See Section 3.3.3. for additional discussion of BPA's Colstrip transmission line proposals.

7.1.4. WESTERN AREA POWER ADMINISTRATION

The Western Area Power Administration (WAPA) was established in December 1977 pursuant to Section 302 of Public Law 95-91, the Department of Energy Organization Act. WAPA is responsible for the federal electric power marketing and transmission lines in 15 central and western states including Montana east of the Continental Divide. WAPA sells power to 464 customers including cooperatives, municipalities, public utility districts, private utilities, federal and state agencies, and irrigation districts. See Table IX-1 in Section 9.7.6. for a listing of electric cooperatives in Montana that purchase power from WAPA.

WAPA is responsible for the operation and maintenance of transmission lines, substations, and various appurtenant power facilities within its geographic area, and also for constructing, operating, and maintaining additional federal transmission facilities that may be authorized in the future. Section 3.3.4. describes transmission lines within Montana that will be constructed and operated by WAPA.

WAPA has an area office in Billings. Its main headquarters is in Golden, Colorado.

7.2. DEPARTMENT OF THE INTERIOR

The federal government manages approximately one-third of the nation's land and coal. Congress has the constitutional authority to control the use and disposition of these lands, and it has delegated to the Secretary of the Interior the responsibility of administering most of the public lands and virtually all of the minerals under public ownership. The following subsections describe the current energy-related activities of a number of agencies in the Department of the Interior: Bureau of Indian Affairs, Bureau of Land Management, Water and Power Resources Service (formerly the Bureau of Reclamation), Fish and Wildlife Service, Geological Survey, and the Office of Surface Mining, Reclamation and Enforcement.

7.2.1. BUREAU OF INDIAN AFFAIRS

The Bureau of Indian Affairs (BIA) Billings Area Office is currently preparing an environmental impact statement on a proposal to lease and mine coal on the Crow Indian Reservation in southeastern Montana. The Crow Tribe and Shell Oil Company completed an agreement in May 1980 giving Shell the right to mine on a 2,560-acre tract containing reserves estimated at 210 million tons, and options on acreage that may contain another 500 million tons. The signing of the agreement ended years of court battles between the Crow Tribe and Shell. The proposed project will also require approval of a mining lease, a mining and reclamation plan, and a mining permit under the federal Surface Mining Control and Reclamation Act. Coal will not be available for sale until 1986 at the earliest. The draft EIS, scheduled for release in mid-December 1980, will consider three alternatives—approval or rejection of the lease, or approval of the lease with modifications.

The BIA released an environmental impact study in 1979 addressing the impacts of three assumed levels of coal development on the Crow Reservation and its ceded area. The study, which was designed to serve as an information document for the Crow Tribe, also analyzed the effects of Crow coal development on neighboring communities such as the bordering Northern Cheyenne Reservation, which has a Class I air quality designation.

In early July 1980, the BIA released an environmental assessment on a proposal by the Atlantic Richfield Company (ARCO) to engage in exploration, development and production activities for oil and gas on the Northern Cheyenne Reservation. Since little is known about the levels of oil and gas on the Cheyenne Reservation, the assessment considered the impacts of several hypothetical levels of production. In May 1980, the Cheyenne Tribe and ARCO reached an agreement that called for ARCO to make an initial $6 million payment to the Tribe, then another $1.3 million payment for tribal operations. In return, ARCO was to receive exploration and production rights to search for oil and gas on the 445,000-acre reservation. In September 1980, a referendum election was held in which tribal members approved the oil and gas lease agreement with ARCO. The agreement will also require approval by the Secretary of the Interior.

7.2.2. BUREAU OF LAND MANAGEMENT

The substantial amount of acreage under federal management in Montana has placed agencies such as the Bureau of Land Management (BLM) in a central position of responsibility with regard to energy development. The BLM is presently involved in several environmental impact processes affecting Montana, including the Northern Tier Pipeline and the Northern Border Pipeline projects, discussed in Sections 3.1.5.1. and 3.1.6.1., respectively. The BLM's most singularly important energy-related function in Montana is in the area of coal leasing and the related review of federal coal lands to determine areas unsuitable for mining.

7.2.2.1. FEDERAL COAL MANAGEMENT PROGRAM

The establishment of a new federal coal management program in June 1979 marked the culmination of almost a decade of effort by the U.S. Department of the Interior (DOI) to develop an acceptable program for coal leasing. The form and content of the new coal program were dramatically influenced by the environmental and resource management legislation that followed the enactment of the National Environmental Policy Act in 1969.

Federal coal leasing was first halted in 1971 by an administratively-imposed moratorium on competitive and preference right leasing of federal coal. This was necessary because the then existing program had led to the sale or commitment of substantial amounts of federal coal but had not resulted in increased coal production. A new program that would minimize speculation on federal coal and renew competitive coal leasing was developed between 1973 and 1975. This program, known as the Energy Minerals Activity Recommendation System, never led to competitive coal leasing because the programmatic EIS was found to be inadequate. In September 1977, a federal court, acting on a lawsuit filed against the 1975 program, ordered that the program be halted until the possible environmental impacts of the program were analyzed sufficiently as required by law. In April 1979, the BLM published a new comprehensive programmatic EIS that analyzed a preferred program for managing federal coal. This new program, established by the Secretary of the Interior in June 1979, incorporates legal requirements governing federal coal development, as well as the coal production policies of the administration.

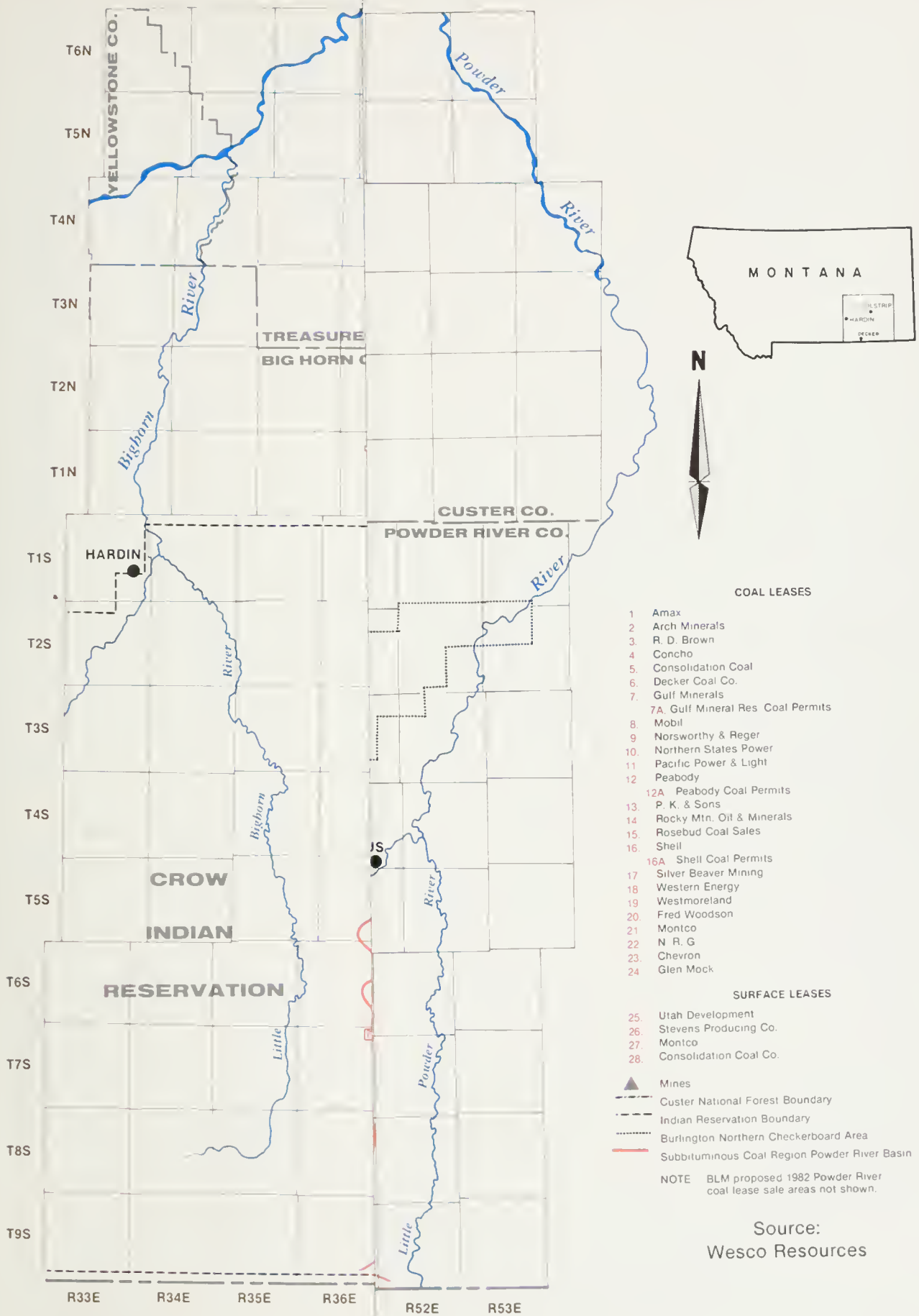
There are four major steps for coal leasing in the new program. In the first step, lands acceptable for federal coal leasing consideration are identified. Next, the Secretary of the Interior selects leasing target levels for each federal coal production region, based on production goals recommended by DOE (see Section 7.1.2.). Third, a schedule for coal lease sales in each federal coal production region for the coming four years is selected and analyzed in an EIS. This phase of the program involves direct participation of the governors and their representatives in the states in which leasing is proposed. Finally, the program sets out procedures for managing individual coal lease sales.

The nation's major coal-bearing areas have been divided into 12 coal regions. Eight of these regions contain significant reserves of federal coal. These eight coal regions are the basic units to which target levels for leasing are assigned and in which tracts will be ranked, selected, and scheduled for sale under the new federal coal management program. Major portions of two of these coal regions, the Powder River and the Fort Union, are located in eastern Montana. The Powder River region includes the following counties: Big Horn, Golden Valley, Musselshell, Powder River, Rosebud, Treasure, and Yellowstone (see Figure VII-A). The Fort Union region includes Carter, Custer, Daniels, Dawson, Fallon, Garfield, McCone, Prairie, Richland, Roosevelt, Sheridan, Valley, and Wibaux counties (see Figure VII-B).

All new leases must be compatible with a comprehensive land use planning framework the BLM is already completing under the Federal Land Policy and Management Act. The planning system uses new federal legislation to: 1) establish minimum coal quality standards; 2) screen out lands that by statute cannot be leased (e.g., national parks); 3) screen out lands that cannot meet other suitability standards (e.g., alluvial valley floors and critical wildlife areas); and 4) screen out lands that are not reclaimable (as defined in the federal surface mining act). Major resource trade-offs will be made and "suitable" areas identified. Previously completed (or partially completed) area management plans in Montana include the Redwater, Decker-Birney, south Rosebud, Coalwood, and Powder River areas. All areas identified as "suitable" for mining are published in a notice of availability for leasing.

State participation in the new federal coal program is carried out largely through the regional coal teams that have been established in each designated federal coal production region. Each regional coal team is chaired by a BLM representative and includes the state BLM Director or his/her

SE INDEX



COAL LEASES

1. Amax
2. Arch Minerals
3. R. D. Brown
4. Concho
5. Consolidation Coal
6. Decker Coal Co.
7. Gulf Minerals
   - 7A. Gulf Mineral Res. Coal Permits
8. Mobil
9. Norsworthy & Reger
10. Northern States Power
11. Pacific Power & Light
12. Peabody
    - 12A. Peabody Coal Permits
13. P. K. & Sons
14. Rocky Mtn. Oil & Minerals
15. Rosebud Coal Sales
16. Shell
    - 16A. Shell Coal Permits
17. Silver Beaver Mining
18. Western Energy
19. Westmoreland
20. Fred Woodson
21. Montco
22. N. R. G.
23. Chevron
24. Glen Mock

SURFACE LEASES

25. Utah Development
26. Stevens Producing Co.
27. Montco
28. Consolidation Coal Co.

▲ Mines

Custer National Forest Boundary

Indian Reservation Boundary

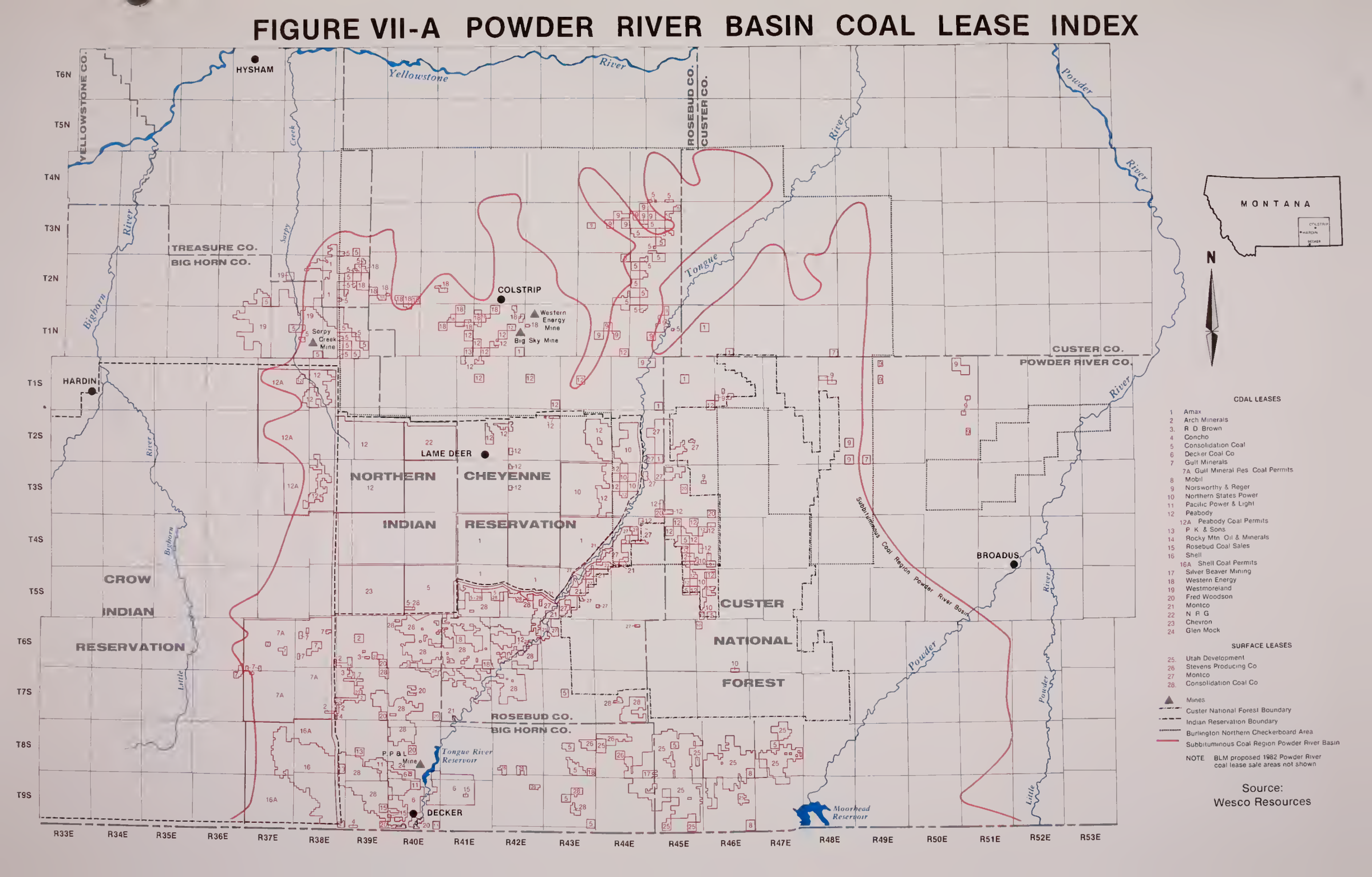
Burlington Northern Checkerboard Area

Subbituminous Coal Region Powder River Basin

NOTE BLM proposed 1982 Powder River coal lease sale areas not shown.

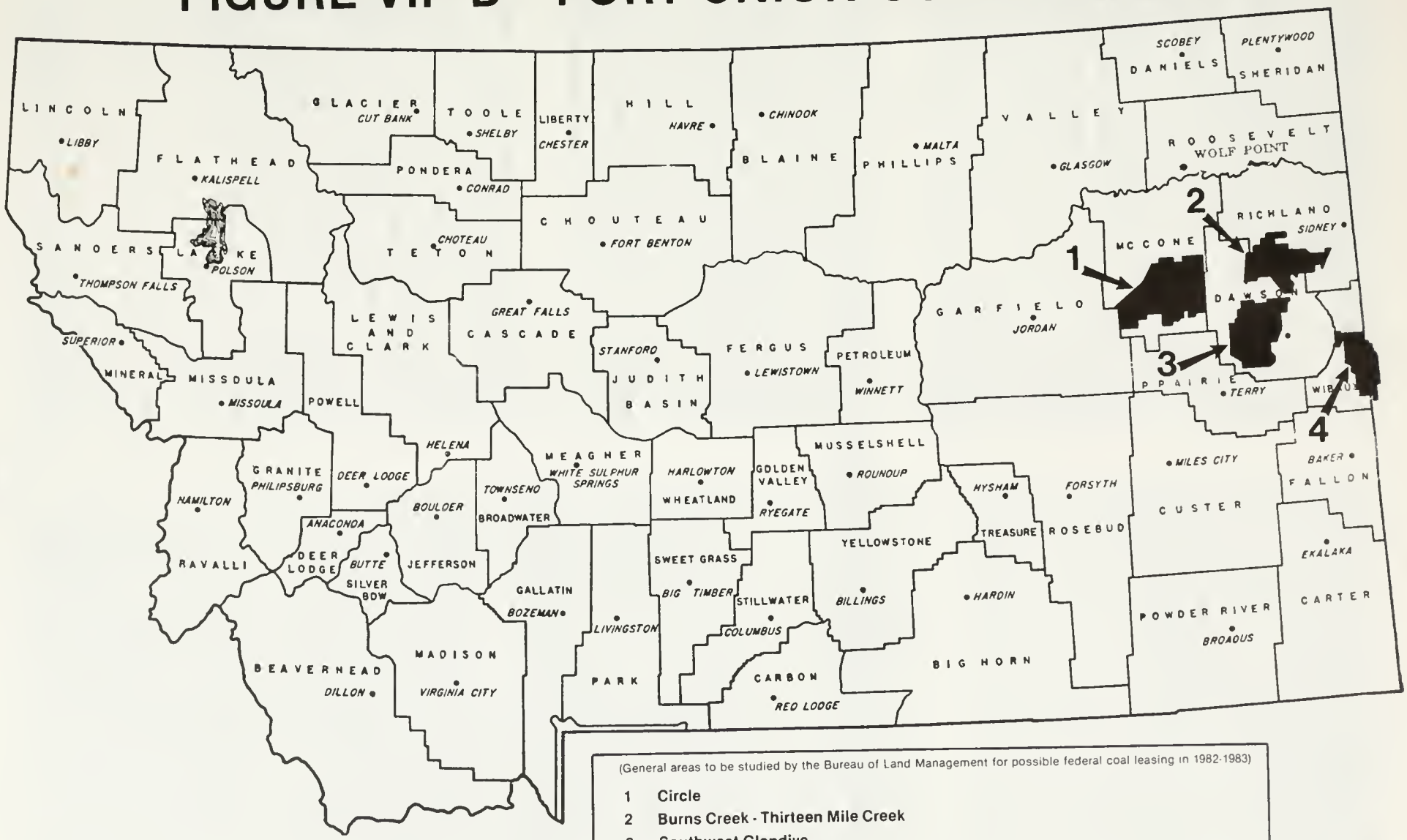
Source:
Wesco Resources

FIGURE VII-A POWDER RIVER BASIN COAL LEASE INDEX



Source:
Wesco Resources

FIGURE VII–B FORT UNION COAL REGION

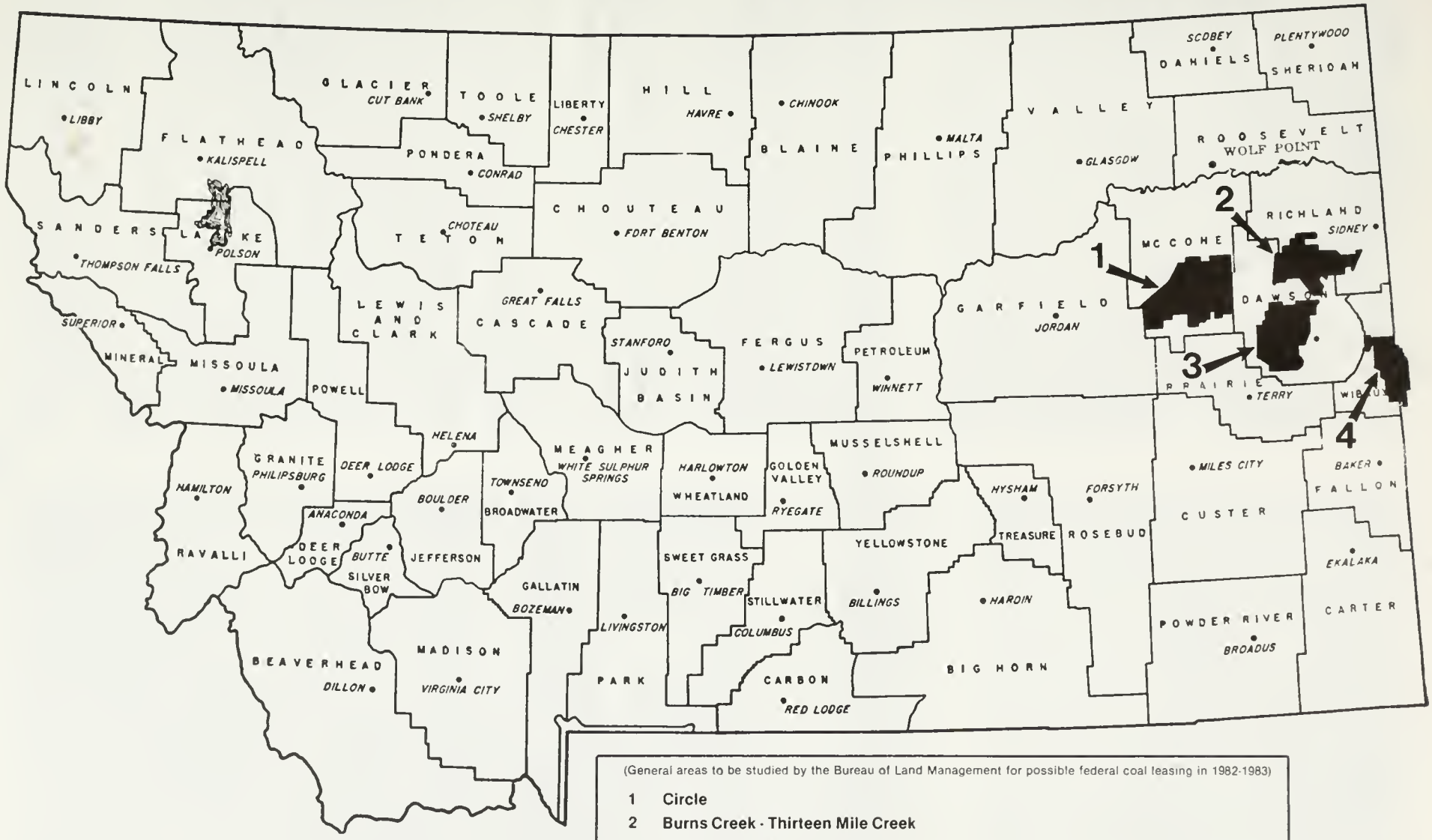


(General areas to be studied by the Bureau of Land Management for possible federal coal leasing in 1982-1983)

1 Circle
2 Burns Creek - Thirteen Mile Creek
3 Southwest Glendive
4 Wibaux - Beach

SOURCE: Fort Union Coal Region Planning Guide, BLM 1980

FIGURE VII–B FORT UNION COAL REGION



(General areas to be studied by the Bureau of Land Management for possible federal coal leasing in 1982-1983)

1 Circle
2 Burns Creek - Thirteen Mile Creek
3 Southwest Glendive
4 Wibaux - Beach

SOURCE: Fort Union Coal Region Planning Guide, BLM 1980

alternate and the governor or his/her representative from each of the states in a given region. Representatives of the U.S. Geological Survey, U.S. Fish and Wildlife Service, Office of Surface Mining and appropriate state agencies and local government officials may serve as ex-officio team members.

The regional coal teams: 1) suggest policies for tract delineation, site-specific analysis, and setting regional leasing targets; 2) rank and select possible lease tracts; 3) set a proposed regional sale schedule that will be analyzed in a regional lease sale EIS; and 4) serve as a forum for DOI-state consultation and cooperation for other coal-management actions in the region. After the regional lease sale EIS's are completed, the regional coal team recommendations and alternatives for the lease sale are forwarded to the Secretary of the Interior for final lease sale decisions.

Montana representatives currently serve on both the Powder River Regional Coal Team, whose first lease sale is scheduled in April 1982, and on the Fort Union Regional Coal Team, whose June 1983 lease sale date is awaiting final approval from the Secretary of the Interior.

In response to specific notices published in the **Federal Register**, industry has been invited to submit expressions of leasing interest in areas designated in the land use plans as acceptable for further consideration for leasing. These "expressions of interest" serve as an important factor in delineating and subsequently ranking tracts. As of July 1980, the BLM has received 10 expressions of leasing interest in the Fort Union Coal Region, and as of September 1980, 11 expressions of interest in the Powder River Coal Region.

One feature of the tract delineation ranking and regional lease sale EIS process in the Fort Union Region of particular interest is the inclusion of coal end use evaluations. The Btu content (heat value) of Fort Union coals, which are primarily lignite, generally precludes economic shipment for any great distance and, therefore, indicates that coal conversion will be proposed in the region. The environmental impact analysis for each tract and for the region as a whole will include a postulated end use of the coal — electric power generation, gasification or liquefaction. Resource requirements, material output of these plants, and impacts on the natural and human environments will be assessed on a generic basis. The Regional Coal Team has determined that in selecting the number, the timing and the location of tracts that will ultimately be offered for lease, it is critically important to understand the cumulative, secondary impacts that may accompany coal mining. The state of Montana is taking an active advisory role in the design of these studies. It is important to note, however, that coal leasing decisions cannot preclude or predetermine the evaluation of specific coal conversion facility proposals that must take place under the Major Facility Siting Act.

7.2.2.2. NORTHERN TIER PIPELINE EIS

BLM was the lead agency responsible for preparing the federal environmental impact statement on the proposed Northern Tier crude oil pipeline. A description of the project and Montana's involvement is discussed in Section 3.1.5.1. The BLM study included the five states (Washington, Idaho, Montana, North Dakota and Minnesota) that the proposed route traverses, as well as all associated port and terminal facilities. A draft of the federal study was released in January 1979, and a final document was issued in August.

A right-of-way on federal lands was issued to Northern Tier Pipeline Company in April 1980. Construction of the pipeline was conditioned on compliance with other federal and state laws, and BLM approval of the company's final project design. The Montana BLM office has been delegated responsibility for stipulation development and construction monitoring for this project on all federal lands pursuant to the federal Mineral Leasing Act.

Of the five states involved, all except Washington have given basic approval to the project. The state of Washington is conducting hearings on the project and a decision is not expected before spring of 1981.

DNRC issued a draft EIS on Northern Tier in October 1979 and a final EIS in April 1980.

7.2.2.3. NORTHERN BORDER PIPELINE

The Northern Border Pipeline is the eastern segment of the Alaska Natural Gas Transportation System. The Montana BLM office coordinated stipulation development on the federal lands involved, which include lands administered by BLM, U.S. Forest Service, and the Corps of Engineers. Construction compliance will be administered by the Federal Inspector's Office,but those responsibilities will probably be carried out by the Montana BLM.

The federal right-of-way grant will be issued in the fall of 1980 with construction to commence in 1981.

The DNRC issued a draft EIS in August 1980 on the portion of the proposed pipeline located in Montana (see Section 3.1.6.1.).

7.2.2.4. ENERGY MINERALS REHABILITATION INVENTORY AND ANALYSIS

Energy Minerals Rehabilitation Inventory and Analysis (EMRIA) is a special BLM administered program, established for the purpose of determining the reclamation potential of lands affected by coal development. In cooperation with the Water and Power Resources Service and the Geological Survey, samples of soil, overburden, coal, substrata, vegetation and water are collected and analyzed. These data serve as a basis for: 1) assessing reclamation potential prior to leasing; 2) preparing site specific stipulations for energy exploration, mining and reclamation plans; and 3) providing a baseline on which to monitor changes that may occur during and after coal strip mining. The Montana study areas on which reports have been published include: Otter Creek, Bear Creek, Dam Creek, Otter Creek East and Hanging Woman Creek. The following areas have reports in progress: Pumpkin Creek, Prairie Dog Creek and Cook Mountain. All of these areas are located in the Tongue River and Powder River drainages.

7.2.3. WATER AND POWER RESOURCES SERVICE

The Water and Power Resources Service (WPRS), formerly the Bureau of Reclamation, operates three hydroelectric facilities in Montana: Hungry Horse, Yellowtail and Canyon Ferry. Canyon Ferry is the subject of a proposal, discussed in Section 3.2.1.2., to add further generation capacity. In addition, WPRS has recently completed an appraisal investigation for increasing power generation at Hungry Horse Dam (see Section 3.2.1.4.).

DNRC has entered into a master contract arrangement with WPRS. This permits Montana to administer subcontracts with potential industrial water users from Fort Peck Reservoir. The WPRS is responsible for water marketing from Fort Peck, which was constructed and is operated by the Corps of Engineers. The master contract provides for a subcontracting limitation of 300,000 acre feet annually and a five year subcontracting period, which began in September 1976. No subcontracts have been executed to date and DNRC has requested an extension of the subcontracting period and approval of the format of the subcontract by the Department of the Interior. No firm plans for water use have been presented by any potential water user, though two or three firms are considering the area near Circle, Montana, as a potential site for gasification plants, power plants, and other coal/synfuel or chemical processes that would need large amounts of water.

WPRS is currently conducting a programmatic study which will culminate in an EIS for its regional water marketing plan and individual marketing contracts. A scoping session for the EIS was held in November 1979. The first effort will be to complete a water availability and air quality packing study which will take approximately six months. After this work is done, a complete EIS will be initiated. The study will emphasize water use for coal development, as in gasification, liquefaction and electric generation. Coal fields under consideration include those of the Fort Union and the Powder River regions in the Yellowstone River Basin.

7.2.4. FISH AND WILDLIFE SERVICE

The U.S. Fish and Wildlife Service (FWS) has primary responsibility for protecting and enhancing the nation's wildlife resource. Since the Surface Mining Control and Reclamation Act was passed in 1977, the FWS has emphasized developing and analyzing fish and wildlife data to determine the most acceptable means of coal development and resource protection. The FWS has both research and operational coal programs. A principal participant in the FWS research effort is the Western Energy and Land Use Team which is headquartered in Fort Collins, Colorado. The FWS coal operations program is implemented by the FWS regions with programmatic guidance from the Branch of Coal and Mineral Operations of the Division of Ecological Services in Washington, D.C.

Recent FWS participation in the federal coal program has included assistance to BLM on land use planning, environmental analyses, and coal lease activity planning; assistance to the federal Office of Surface Mining (OSM) in the review of mining and reclamation plans, early planning assistance to the industry; and assistance to OSM in their abandoned mine lands programs. FWS also helped develop seven fish and wildlife criteria for identifying federal lands unsuitable for coal leasing, as well as a computer-based Rapid Assessment Method for analyzing fish and wildlife resource information in coal demand areas. Included in this development were: expanding the FWS Plant Information Network (an operational computer information system that provides information about plants useful for surface mine reclamation) to include the coal regions of Wyoming and Montana; developing estimates of breeding bird densities on Montana and Wyoming coal lands; and synthesizing data on ecological base-line study methods and procedures and relationships of wildlife species to surface mining.

Habitat evaluation procedures were refined and expanded by the FWS for use by development agencies in project planning and for predicting fish and wildlife impacts and analyzing ways of minimizing those impacts. The OSM and FWS are jointly planning research demonstration projects to refine and adapt habitat evaluation procedures for coal planning.

More complete methodologies have been developed by FWS for instream flow assessments, many of which will be used in planning coal development. Through the National Wetland Inventory, maps of the wetlands in the Montana and Wyoming coal fields were produced. These maps will be used in various stages of decisions regarding coal leasing. In addition, a research project for OSM was begun to identify methods for monitoring fish and wildlife, parameters during all phases of coal mining and reclamation.

7.2.5. GEOLOGICAL SURVEY

The U.S. Geological Survey (USGS) is the principal federal agency that collects, analyzes, and presents scientific information regarding the nation's mineral and water resources. Scientists from USGS prepare maps and reports describing national, regional, and local coal resources. The coal program includes regional environmental and coal-resources evaluation activities, hydrologic assessments in coal areas, and lease and mining supervision. USGS is responsible for certain aspects of coal mine regulation which are described in relation to the duties of the federal Office of Surface Mining, Reclamation and Enforcement in the following subsection. USGS is currently delineating and evaluating potential coal lease tracts in eastern Montana in preparation for federal lease sales beginning in 1982. Drilling and mapping of Montana's coal deposits is continuing in many parts of eastern Montana and the Powder River Basin.

In addition, USGS has been involved in several environmental impact statements in Montana, including the Northern Powder River Basin regional EIS (see Section 5.14.2.), and the federal Colstrip Units 3 and 4 EIS and other projects discussed in Section 3.

7.2.6. OFFICE OF SURFACE MINING, RECLAMATION AND ENFORCEMENT

The Office of Surface Mining, Reclamation and Enforcement (OSM) has a field office at the Region V headquarters in Denver which is directly responsible for coal mining operations in Montana and other states of the Rocky Mountain West. OSM administers the 1977 federal Surface Mining Control and Reclamation Act described in Section 7.2.6.1.

Figure VII-C depicts the realignment of coal management responsibilities that has occurred since OSM was created. The functions are shown in chronological sequence, beginning with pre-leasing activities and progressing through the post-leasing/pre-mining phase to actual mining and post-mining periods. The small boxes attached to each function show the agency(ies) originally assigned to each function. As noted in Figure VII-C, USGS and BLM have retained many of their original responsibilities, especially with regard to management of the coal as a mineral resource and the leasing function, respectively. OSM has primarily taken over evaluation and regulation of mining plans and operations to fulfill its responsibility for environmental performance standards, land reclamation and mine abandonment procedures. During mining, USGS retains responsibility for coal production and BLM continues its authority over non-mining functions outside the immediate mining area, as well as special requirements for protection of natural resources and post-mining use of affected lands. With most functions, the three agencies are pursuing a policy of substantial consultation and concurrence. This is especially true in establishing criteria to guide the federal coal lands review process, in designating areas unsuitable for mining, and in preparing regional and site-specific EIS's prior to leasing. BLM's specific efforts to design a new federal coal management program are discussed in Section 7.2.2.1.

Although OSM is the federal agency responsible for regulating mining operations and land reclamation, a central provision of the surface mining act is that the states shall have primary authority in these areas. According to the time schedule stipulated in the act, OSM commenced its inspection and enforcement activities for new surface mines in February 1978 and for existing mining operations in May 1978.

In March 1979, OSM issued its final permanent regulatory program regulations. Under these regulations, all new mining plans or proposals to expand operations were required to comply with the permanent program performance standards by October 1979. As a result of public comment and petitioning, the final OSM regulations incorporated several revisions, including new enforcement procedures and new standards for spoil and waste disposal, prime farmlands, and original contour. Prompted in part by a petition from Montana which was subsequently joined by other states, OSM proposed in September 1979 to change the schedule for compliance by existing operations on federal lands. The Secretary of the Interior then postponed operator compliance with the permanent performance standards until a state program has been approved or a federal program for a state had been implemented. OSM has made other changes in the initial regulations to make them more flexible and workable.

Montana's permanent program for regulation of coal mining and reclamation was approved in April 1980. A cooperative agreement is now being negotiated with OSM to complete the final implementation of Montana's program.

7.2.6.1. SURFACE MINING CONTROL AND RECLAMATION ACT OF 1977

In passing this legislation, Congress declared that coal mining operations contribute significantly to the nation's energy requirements, but that many mining operations disturb surface areas in ways that adversely affect commerce and the public welfare. Since surface mining and reclamation technology is available, effective and reasonable regulation is an appropriate and necessary way to minimize the adverse social, economic and environmental effects of mining. Because coal mining areas are so diverse, Congress assigned primary regulatory responsibility to the states.

Coal mine operators producing 250 tons or more of coal from any one location in 12 consecutive months are subject to the Act. It provides for an initial regulatory period beginning six months after enactment for new mining operations and nine months for existing operations. Operators are required to: 1) restore land to a condition capable of supporting the uses it was capable of supporting prior to mining; 2) restore the approximate original contour; 3) remove and preserve the topsoil for later redistribution; 4) minimize disturbance to the hydraulic balance; 5) design, maintain and remove all existing and new waste piles used as dams or embankments; 6) use explosives in accordance with state and

Pre-Leasing Functions

GS	GS
Evaluate Coal Resource	

NA	OSM, with BLM field offices
Petition process to designate lands unsuitable for surface mining	

NA	BLM, (with OSM, GS, et al.)
Federal coal lands review and designation of areas unsuitable for mining	

BLM/GS	BLM (with OSM, GS)
Regional and site-specific EIS's	

BLM/GS	BLM (with OSM & GS)
Prepare special lease terms/conditions	

BLM	BLM
Official liaison with lease applicants	

NA	BLM
Surface owner consent to coal leases	

Post Leasing, Pre-mining Functions

GS	Joint OSM-GS
Evaluate surface use applications over leased coal, un-related to the leases	

GS	GS until mine plan received, then OSM with BLM & GS concurrence
Delineate "area of operations" (AO) on coal leases	

GS	OSM (with GS & BLM
Approval of mining plans and EIS preparation	

BLM	BLM
Responsibility for non-lessee activity on leased land prior to mining	

Responsibility During Mining

GS Production, Environmental Enforcement	GS Production
BLM Non-mining functions outside AO	OSM Environmental Enforcement BLM Non-mining functions outside AO
Official liaison with lessees and/or operators	

GS/BLM	OSM
Emergency Environmental Situations	

Post-Mining

GS/BLM	OSM (with GS & BLM
Inspect & approve abandonment of operations	

BLM	BLM during initial regulatory program, then re-negotiate
Release of performance bond	

LEGEND

agency originally responsible for each function	agency presently responsible for each function
FUNCTION	

Bureau of Land Management (BLM)
Geological Survey (GS)
Office of Surface Mining (OSM)

NA = function not previously assigned

SOURCE: Department of the Interior 1978

FIGURE VII-C FEDERAL COAL MANAGEMENT - DIVISION OF AGENCY RESPONSIBILITIES

federal regulations as stipulated; 7) establish a permanent vegetative cover on affected areas; 8) on slopes greater than 20 degrees, prevent placement of spoil on downslopes, cover the highwall and return the site to original contour.

During the initial period, federal personnel inspected every mine site at least once every six months. The initial regulation programs ended in Montana when the state program gained the approval of the Secretary of the Interior. Requirements for the state program are discussed in Section 5.14.1.1.

In addition to the initial program standards, the permanent regulatory program requires operators to: maximize use of the coal resource; restore the top soil; preserve the individual soil horizons from prime farm land; stabilize all areas to control erosion and pollution; construct permanent water impoundments to preserve water quality and quantity for adjacent users; treat all acid-forming or toxic materials to prevent water contamination; conduct reclamation as contemporaneously as practical with mining; assume responsibility for successful vegetation for 10 years in regions with less than 26 inches of average annual precipitation; and stabilize all waste piles and excess spoil.

This is a representative but only partial listing of the items and practices mentioned specifically. In addition, operators must post a performance bond equivalent to the cost of a third party to reclaim if the operator defaults.

States with approved programs are responsible for enforcement,though federal inspections are still required to evaluate program performance. Enforcement methods include issuing notices of violations, or cessation orders in case of imminent danger to the public, significant environmental harm or failure to comply with violation notices, and suspending and revoking permits. Civil penalties cannot exceed $2,500 per violation per day. Willful violations may incur fines up to $10,000 and up to one year imprisonment.

Costs of determining probable hydrologic consequences of mining and evaluation of test borings for a permit application may be assumed by the state (or federal) authority upon the request of operators who will produce less than 100,000 tons of coal annually.

The legislation required that all requirements of the act be applied to federal lands, except for Indian lands, within one year after enactment. States such as Montana, with existing agreements to regulate surface coal mining on federal lands, have been allowed to continue, though the Secretary of the Interior may not delegate his duty to approve mining plans and designate federal lands unsuitable for mining.

Any person adversely affected by a proposed permit application may file an objection and may request an informal conference in the locality of the proposed mine site. Persons suffering personal injury or property damage may sue the mine operator for damages. Objections may also be filed regarding release of a performance bond.

Federal coal under private land may not be leased until the surface owner has given consent to enter and commence surface mining operations. Also, if mining of federal coal is proposed under a surface subject to federal lease, the application must include either the lessee's written consent or evidence of bond posted to assure against damages to crops or improvements of the land.

On finding that reclamation is not technologically and economically feasible, pursuant to the act's requirements, the regulatory authority shall designate an area as unsuitable for coal mining. Other areas may be so designated in response to a petition from a person whose interest is or may be adversely affected if subsequent analyses demonstrate that: 1) the area is incompatible with state or local land use plans; 2) significant damage to fragile or historic lands would result; 3) substantial reduction in long-range productivity of renewable resource lands would result; or 4) natural hazard lands would be affected in such a manner as to endanger life or property.

Surface mining operations not already in existence on the date of enactment are prohibited in national parks, wildernesses and other specially managed areas, on federal lands in national forests except under certain conditions, within 100 feet of a public road right-of-way, within 300 feet of any public building and within 300 feet of any occupied dwelling, unless waived by the owner.

An abandoned mine reclamation fund was created to reclaim lands and water affected by mining prior to passage of the act. The fund is financed by fees of 35 cents per ton of surface mined coal, 15 cents for underground mined coal and 10 cents for lignite. State or Indian reservation lands are eligible to receive 50 percent of the fund collected in that state. Rural lands are eligible for grants covering up to 80 percent of cost to land owners to control erosion and prevent damage from unreclaimed mined lands.

Funds were also allocated to the Secretary of the Interior to conduct research and demonstration projects on mining and mineral resource problems through state Mining and Mineral Resources and Research Institutes (MMRRIs). The Montana College of Mineral Science and Technology was granted MMRRI status in September 1978. Further funds were provided to DOE for constructing and operating 10 university coal research laboratories, but these funds have never been appropriated by Congress. DOE was also authorized to annually award up to 100 two-year fellowships in applied science and engineering related to production, conservation and utilization of fuels and energy.

7.3. DEPARTMENT OF AGRICULTURE

7.3.1. FOREST SERVICE

Current energy-related Forest Service activities in Montana include:

1) Preparing the Bell-Hot Springs 500 kilovolt transmission corridor EIS. The Bonneville Power Administration (BPA) is the lead federal agency and the Forest Service is acting as a cooperating agency.

2) Planning for the 115 kilovolt transmission line from Macks Inn, Idaho, to West Yellowstone proposed by the Fall River Rural Electric Cooperative.

3) Project planning for the 500 kilovolt Colstrip-Hot Springs transmission line with project proponents and the BPA.

4) Project planning for the Libby-Integration transmission line with the BPA.

5) Assessing possible impacts on Forest Service lands of the generating and transmission facilities proposed by Basin Electric Power Cooperative.

6) Preparing the Kootenai Falls hydroelectric project EIS. The Federal Energy Regulatory Commission is the lead federal agency with the Forest Service acting as a cooperating agency.

7) The Northern Tier pipeline project. A federal EIS, prepared under the lead of BLM, is completed. After the Northern Tier route is selected, the Forest Service will be involved in centerline selection and project construction supervision.

8) Evaluating the overall Forest Service energy management role. Energy conservation and development on Forest Service lands are addressed in a draft Regional Plan which is scheduled for completion in late 1980.

9) Implementing an energy conservation program aimed at reducing energy consumption 20 percent below the 1975 level by 1985. This program includes energy conservation in Forest Service facilities, vehicles, and activities.

10) A joint utility-transportation corridor-planning effort with DNRC and BLM (see Section 5.10.3.3.).

11) Exploring the possibilities of using wood residues as fuel for steam electric generation and raw material for the production of wood alcohol.

12) The Forest Service also manages most of the acreage in Montana's Overthrust Belt, which overlays potentially large deposits of oil and gas. Recent geophysical exploration, and significant discoveries in the Belt in Canada, Wyoming, and Utah, have renewed interest in the 2.5 million acres under lease application in the National Forests in Montana. Those lands outside wilderness and those recommended for non-wilderness are being considered by the Forest Service for leasing through an environmental analysis process and in accord with the National Environmental Policy Act. Lease recommendations for non-wilderness lands will be made before the end of 1980. See Section 10.6. for a further discussion of the Overthrust Belt in Montana.

7.3.1.1. SURFACE ENVIRONMENT AND MINING

The Surface Environment and Mining (SEAM) Program was a research, development and applications effort started by the Forest Service in 1974 and completed in September 1979. It initiated over 160 research studies, 11 demonstration areas, and several planning tools to help assess and mitigate the social, economic, administrative and environmental impacts of mining and reclamation. By the end of 1979, all appropriate SEAM activities were incorporated into the operational branches of the Forest Service. In addition to the scientific publications and reports, a set of User Guides was developed for vegetation, soils, hydrological, engineering, sociological, and economic assessments. A Land Manager's Handbook on Minerals Development was also prepared. Funding in 1980 and 1981 provides for continuing certain elements of the research program and maintaining the operational aspects of the SEAM program.

7.4. DEPARTMENT OF DEFENSE

7.4.1. U.S. ARMY CORPS OF ENGINEERS

The Corps of Engineers represents the Secretary of the Army in water resource planning, construction, and operation. While the Corps' primary responsibilities are for navigation and flood control, under the multiple purpose concept of water resource development, its projects are designed to serve as many additional functions as practicable. One of the most important of these additional functions is hydroelectric power. Within Montana, the Corps operates hydroelectric facilities at Libby and Fort Peck. The addition of new generation at Libby is discussed in Section 3.2.1.1. Although the Corps is continuing feasibility studies for additional generation at Fort Peck (see Section 3.2.1.3.), the Clark Fork-Flathead Hydropower Study was discontinued in 1979 when Congress voted to delete study funds from the Corp's 1980 federal budget (see Section 3.2.2.2.).

The Corps is conducting an assessment of the nation's hydroelectric resources. This study is described in the following subsection.

7.4.1.1. NATIONAL HYDROELECTRIC POWER STUDY

The Corps of Engineers is conducting a detailed assessment of the nation's hydroelectric resources as part of the National Hydroelectric Power Study (NHPS) authorized by Section 167 of the Water Resources Development Act of 1976 (P.L. 94-587). The study is designed to: 1) provide a current and comprehensive estimate of the potential and need for incremental or new generation at existing dams and other water resource projects as well as for undeveloped sites in the United States; 2) analyze existing policies regarding hydropower; 3) identify the environmental and social effects of more hydropower; and 4) recommend hydropower programs and policies to Congress.

In the "Preliminary Inventory of Hydropower Resources" for the Mid-Continent Region released in July 1979, the Corps identified 242 sites in Montana where new or additional hydroelectric facilities could be located. The sites included creeks, canals, and rivers in 40 of Montana's 56 counties. (See table VII-2).

TABLE VII-2
POTENTIAL OR ADDITIONAL HYDROELECTRIC POWER SITES IN MONTANA

	EXISTING	INCREMENTAL	UNDEVELOPED	TOTAL
Number of Sites	20	88	134	242
Capacity (MW)	2,418	2,332	15,313	20,063
Energy (GWH)	9,722	5,195	39,348	54,265

Through a four-step screening process, each of the potential sites was analyzed to determine its physical potential, economic feasibility, environmental impacts, and acceptability for development. These screenings have sharply reduced the number of potential sites originally proposed by the Corps. At the present time, only two sites remain in the study in the eastern quarter of the state—the Bighorn on the Bighorn River, with an incremental capacity of 305 megawatts, and Fort Peck Lake on the Missouri River, with an incremental capacity of 185 megawatts.

Screenings are continuing for 50 sites in the western three-quarters of the state. A review of these sites was conducted by representatives of DNRC, the Department of Health and Environmental Sciences, and the Department of Fish, Wildlife and Parks, and presented to the Corps at a public meeting in August 1980. The state recommended that all sites on the Blackfoot and Yaak rivers be eliminated from the NHPS for environmental reasons, and sites on these rivers were later dropped from intensive study. Other potential hydroelectric sites listed in the Corps study were also questioned. While it recognized that the Corps had not completed the NHPS, the state felt that the Corps had not adequately addressed such concerns as the potential fluctuations in reservoir surface elevations or in downstream flows caused by additional hydropower development. State agency representatives pointed out that diversion of water for other uses was ignored in the NHPS and that detailed consideration of the social, economic, institutional and environmental constraints associated with hydropower development was not specifically included in the Corps' analysis. For the NHPS in general, the state recommended that the Corps conduct an independent "unit of energy" analysis that would evaluate the feasibility of a comprehensive conservation program as an alternative to extensive hydroelectric development.

Draft reports on the region's hydropower potential will be completed by the Corps in October 1980. These reports will then be sent to the NHPS managers at the Institute for Water Resources in Fort Belvoir, Virginia, for inclusion in the final national report. The national report, which will be forwarded to Congress, will be completed in October 1981.

7.5. ENVIRONMENTAL PROTECTION AGENCY

The Environmental Protection Agency's (EPA) Region VIII headquarters in Denver serves Montana, Wyoming, Colorado, North Dakota, South Dakota, and Utah. The Region VIII Energy Policy Coordination Office assists the Regional Administrator in forming energy policy for the region, and consults with EPA state offices, individuals, industry, state and other agencies on energy resources and activities within the Region. The Office reviews energy-related materials for other permit or regulatory agencies. A community planning coordinator is assigned to the Federal-Regional Council (see Section 6.8.) to work on the community impacts of energy-related developments. In 1979-80, the Energy Policy Coordination Office played a significant role in projects related to oil shale development, visibility regulations related to energy development, and state coal regulatory program submissions under the federal Surface Mining Control and Reclamation Act (see Section 7.2.6.1.). The Office also deals with synfuels, uranium, coal slurry, and conservation and solar programs.

An energy policy statement for EPA Region VIII, based on current EPA legislative authority, was released in June 1980. Among the regional objectives contained in the statement are: 1) encouraging energy conservation measures and the use of renewable resources in the region; 2) assuring that environmental standards and objectives (e.g., Prevention of Significant Deterioration increments and water quality criteria) are not violated by energy facilities; 3) expediting regulatory decision making on all energy projects; 4) consolidating procedures for applying for, reviewing, and issuing environmentally relevant project authorizations; 5) providing assistance to state and local environmental agencies on energy issues; 6) advocating selection of energy development options that minimize consumptive use of water, do not increase salinity levels in streams, and preferentially use lower quality (e.g., saline) waters when feasible; and 7) advocating the orderly phased development of synthetic fuel facilities.

In June 1980, the Region VIII EPA headquarters issued the first "Energy Policy Review and Permitting Status Report." The report, which will be updated quarterly, discusses energy project review and permitting actions taken by EPA for the six states in the Region. Projections of energy resource development, and regulatory actions responding to that development, are also in the report, as well as project status and EPA regulatory status on synthetic fuels development in the region.

EPA has not yet promulgated any new regulations specific to synfuels, though it is currently undertaking an interdisciplinary Multimedia Environmental Goal program to identify the most critical air, water, and solid waste effluents from major synfuel technologies and associated health and environmental effects.

EPA's actions with respect to Colstrip 3 and 4 are discussed in Section 10.1.

In August 1978, the EPA opened a Montana office for coordination of EPA programs in Montana. The office is staffed with specialists in the environmental areas of water, air, solid wastes, toxic substances, and pesticides. Energy questions are handled through the Energy Policy Coordination Office in Denver. The Montana EPA office is coordinating the Poplar River EIS (see Section 5.2.1.) and the Flathead Basin Environmental Study (see Section 5.2.2.).

LOCAL GOVERNMENT AND ENERGY

This section summarizes initial efforts of local government in energy planning. The potential for effective energy planning at the local level is particularly good in the areas of conserving energy and developing renewable, decentralized sources of energy. The DNRC Energy Extension Service Program has begun to work with local governments to encourage energy conservation and the use of renewable energy systems (see Section 5.10.2.1.3.).

8.1. BILLINGS COMMUNITY ENERGY PROGRAM

The Billings Community Energy Program (BiCEP) is a private, nonprofit corporation comprised of approximately 60 businessmen, contractors, bankers, and other citizens from the local Billings community. BiCEP was initiated in June 1979 through the efforts of a local energy organizer for the Alternative Energy Resources Organization (AERO). BiCEP's goals, adopted in a joint resolution by the city and county governments, are to make government buildings energy-tight and the city as a whole "the most energy-conscious and energy-saving community in the state of Montana by 1982" — which happens to be Billings' centennial year. The program is divided into four main committees: Buildings and Operations, Public Information, Building and Finance, and Planning.

The goal of the Buildings and Operations Committee is to reduce energy consumption in large public and private buildings in Billings by offering training programs for building managers and operating personnel.

The Public Information Committee plans to identify resource people and appropriate topics for workshops on energy conservation and renewable energy methods. To date, the Committee has supplied information for a special energy tabloid in the **Billings Gazette** and has put together the Billings Energy Tearsheet, a resource file. Bike and Pool It Week was promoted by BiCEP's Public Information Committee in cooperation with the DNRC and AERO, the co-sponsors of the event.

The Building and Finance Committee of BiCEP is pursuing its goal of educating lenders and builders in the areas of new construction techniques and conservation retrofits. Workshops and seminars are planned to teach local appraisers, bankers, and realtors how to evaluate buildings with energy conservation and renewable energy systems, and to make builders more aware of structural measures, design techniques and heating and cooling systems that conserve energy and rely on renewable energy. BiCEP will sponsor a solar finance workshop in December 1980.

BiCEP's Planning Committee, working with the City/County Planning staff and the City/County Planning Board, will review subdivision and zoning regulations to identify barriers to improved energy use in Billings, with an emphasis on transportation and land use. The Planning Committee will also develop and publish an Energy Conservation Handbook, to be distributed to libraries, city-county offices, the Chamber of Commerce, utility companies, and other appropriate public places.

8.2. BUTTE-SILVER BOW COMMUNITY ENERGY MANAGEMENT PROGRAM

In the spring of 1980, the Butte-Silver Bow government initiated the Butte-Silver Bow Community Energy Management Program. An Energy Management Team, made up of individuals from Butte-Silver Bow and representatives from the National Center for Appropriate Technology (NCAT) is responsible for the program. Its prime object is to project future energy demand and assess energy sources, conversion technologies, and legislative policies that most adequately and economically meet the projected demand.

The Butte-Silver Bow Council of Commissioners unanimously passed a resolution "establishing and approving a comprehensive energy policy for the communities of Butte-Silver Bow." The resolution commits Butte-Silver Bow to an energy efficient future and will be the basis for energy policy development. An Advisory Committee made up of Butte citizens, and a Technical Advisory Committee, of NCAT personnel, were formed to assist the Energy Management Team.

Data collection for residential, commercial, industrial, transportation, governmental, institutional, and nonprofit sectors (churches) has begun. Energy audits have been conducted on government and public buildings, including the Montana College of Mineral Science and Technology, and energy conservation measures have been instituted in several government buildings.

The program includes outreach activities to raise public awareness of energy issues, working with the local Human Resource Development Council to identify the energy-related problems of low-income people, and an effort to work with business and commercial interests.

8.3. CITY OF HELENA

In 1977 the Helena City Commission passed a resolution alerting employees and citizens to the fact that energy conservation is official policy and established an Energy Advisory Board to make recommendations to the City Commission regarding implementation of a community energy program. The City Manager, under direction from the Commission, assigned the City Budget Director responsibility for energy matters.

In 1978 the City Commission authorized the formation of an Energy Task Force. Membership is open to any interested person, and the chairman of the Task Force is a member of the Advisory Board. The Task Force has four committees: Conservation in City Buildings, Building and Finance, Public Information, and Planning and Development.

In late 1978, the City Commission authorized an expenditure of up to $5,000 for the energy program. The City had previously conducted energy audits examining all city buildings, facilities, plants, traffic lights, parks, and street lights, and found that the Neighborhood Center was the least energy-efficient city structure in Helena. Part of the $5,000 was earmarked for developing a retrofit plan for the Neighborhood Center, and the rest was used to continue the program of energy conservation in city buildings and to support a community-wide energy program.

In addition, the City of Helena has established an Energy Information Resource Center at the Lewis and Clark Library. The Energy Task Force Information Committee ran a series of educational workshops and seminars from July through December of 1979. The Building and Finance Committee worked with the Helena Realtor's Association to develop an energy checklist for home buyers.

In July 1979, the City received a report it had commissioned entitled "Report to the Helena City Commission on Problems and Opportunities Posed by the Relationship of Energy to City Planning." The report included an estimate of community-wide energy use in the Helena area. In 1980 the City Budget and Evaluation Office completed an exhaustive report on energy use by the City of Helena. Later in 1980, the Lewis and Clark Areawide Planning Organization received a $10,000 grant from the DOE to develop an energy element of the comprehensive plan for Helena and an energy policy for Lewis and Clark County.

When the City approved its 1981 budget, the Commission set a goal of reducing energy use by 10 percent for the coming year, with an expected savings of approximately $19,000. They then budgeted half of this amount, $9,500, for conserving energy in City operations, thereby ensuring that the goal will be met.

The City of Helena has also had a city-wide newsprint recycling operation since April 1978. Newsprint is kept separate from other trash by homeowners and picked up by the city sanitation crews on regular collection days. The City sells the newsprint to a firm in Great Falls where it is made into home insulation. The program paid for itself within six weeks of operation, and though the market for newsprint has fluctuated widely, the program has nevertheless resulted in a net profit for the City of Helena. Approximately 220 tons of newsprint are recycled each year.

8.4. MISSOULA VALLEY ENERGY CONSERVATION BOARD

Most of the energy-related activity in Missoula has involved the formalization of the Missoula Valley Energy Conservation Board. This Board began as a series of informal discussions on energy topics sponsored by the county government. In the past year these discussions have led to an agreement among the City of Missoula, Missoula County, District XI Human Resource Development Council (HRDC) and the local elementary and high school districts. The agreement calls for promotion of energy conservation and coordination of local efforts in this regard.

Seven voting members represent the City, the County, the HRDC, the schools, the public utility sector, the business community and the public at large. An indefinite number of advisory members may also be added.

The agreement was signed in May 1980. Voting members have been nominated, and the Board's first formal meeting was held in early October.

Although the Board has not formally met, it has generated a variety of energy activities locally. The City, the HRDC and the Montana Power Company are cooperating with the County in its application for an innovative energy conservation grant from the Department of Housing and Urban Development. Both the City and the County have requested technical assistance in developing local codes and regulations to promote passive solar design, and both are discussing allocation of funds to staff the Conservation Board.

8.5. MONTANA ASSOCIATION OF COUNTIES

The Montana Association of Counties (MACo) is a private nonprofit association located in Helena which represents Montana's counties. Many units of county government in Montana are actively assessing current energy uses in order to reduce the impact of energy costs on the county budget. MACo will help county officials establish guidelines for energy conservation in their communities, suggest managerial techniques to reduce energy consumption, provide training materials demonstrating the advantages of energy conservation, and initiate energy audits of existing physical structures. MACo is also cooperating with DNRC's Energy Extension Service (see Section 5.10.2.1.3.) to develop improved mechanisms for working with counties on energy conservation measures.

At its 1980 meeting MACo adopted a number of policy statements on energy use and natural resource development. MACo urged county officials to establish guidelines for conserving energy within their jurisdictions and asked state and federal governments to create incentives for further development of new energy sources and alternate uses of existing sources. State and federal agencies were also encouraged to address the needs of counties affected by coal, oil and natural gas development, timber production, mineral resources and hydroelectric development, and to provide financial assistance so that counties can provide the services and facilities needed because of natural resource development.

8.6. MONTANA LEAGUE OF CITIES AND TOWNS

In 1979 the Montana League of Cities and Towns mailed fuel supply questionnaires to 10 Montana cities. The League questionnaire was designed to elicit information on the nature and extent of diesel shortages in these cities, and to determine what impact the summer fuel shortage was having on city-provided services. The League channeled the information they compiled to DNRC, which, in turn, reported its findings and suggested appropriate action to the Governor.

In September 1980, the League held a workshop "Energy and Your Town" for local officials. Its purpose was to examine energy conservation in city operations and energy management planning at the community level. The League sponsored the workshop in recognition that local responsibilities such as land use, transportation, building code enforcement, public housing, urban development, and libraries contribute to a healthy local economy through programs and policies that foster conservation and use of renewable energy sources.

Past League programs have included cooperation with the Montana Energy Office and local Chambers of Commerce in conducting energy conservation workshops that featured walk-through audits of large businesses in each city where workshops were held. A series of slides was produced in advance to pinpoint energy waste and potential savings. The League has also provided training materials necessary to implement locally-designed and operated energy conservation and management programs.

PRIVATE SECTOR ENERGY—RELATED ORGANIZATIONS

9.1. MONTANA ENERGY AND MHD RESEARCH AND DEVELOPMENT INSTITUTE

The Montana Energy and MHD Research and Development Institute (MERDI) was established in Butte in 1974 as a tax-exempt, nonprofit Montana organization for the purpose of developing methods for using and conserving Western energy resources and to carry out a major research and hardware phase of the national magnetohydrodynamics (MHD) program.

9.1.1. MAGNETOHYDRODYNAMICS

As a major participant in DOE's national MHD program, MERDI is specifically associated with the Component Development and Integration Facility (CDIF) being built south of Butte. The facility is scheduled for individual component testing during the winter of 1980. Complete testing will take place during the spring of 1981. The facility will be used to conduct component developmental and systems performance tests on the key hot gas components of an MHD power train and related support equipment. MERDI is also examining the potential impacts (environmental and socioeconomic) of the CDIF on the community of Butte-Silver Bow. The project involves water quality/biological and air quality/biological monitoring and identifying and evaluating socioeconomic impacts. Another portion of the program involves ceramic materials research on MHD channel components. In September 1980,MERDI announced that a new company, Mountain States Energy,would take over operation of the MHD Component Development and Integration Facility. Mountain States is a wholly-owned subsidiary of MERDI.

In addition to MHD research,MERDI is also providing environmental and other support services to other MHD research facilities across the country.

9.1.2. OTHER PROGRAMS

MERDI is currently involved in several projects designed to produce alcohol from biomass. One is a contract to manage the design, construction, and start-up phases of a million-gallon per year ethanol production facility near Great Falls. Another is a technical and economic feasibility study of a two-million gallon per year ethanol facility, being conducted for a plant proposed for the Billings area.

Under a contract with the Solar Energy Research Institute and DNRC, MERDI is performing a technology assessment of the production of ethanol from biomass. This project entails a review of state-of-the-art alcohol production for plants producing from .5 to 5 million gallons of ethanol per year. MERDI is also conducting an in-house research program concerning fermentation, distillation, and in-plant fluid transfers.

MERDI's wind programs are centered in the Whitehall and Livingston areas and consist of monitoring the wind regimes and operating a 25 kilowatt machine. DNRC sponsors these programs at two sites in Whitehall and one each in Livingston, Big Timber, and Springdale. The 25 kilowatt machine was purchased and installed by the Montana Power Company (MPC) in conjunction with DNRC and MERDI. It produces power that is being distributed to the MPC grid system. MPC and MERDI jointly submitted a proposal to DOE in response to a national

request for nominations of sites that would be candidates for large (more than one megawatt) wind machines. A site near Livingston was nominated and subsequently selected as one of 17 in the U.S. Recently, wind monitoring equipment has been supplied by Pacific Northwest Battelle Laboratories under a contract with DOE. Data will be collected for at least one year by MPC and MERDI, to be reviewed by Pacific Northwest Battelle Laboratories and DOE.

MERDI's fuel cell program is in its fourth year, with a new DOE contract for MERDI research on future-generation, high-temperature fuel cells. MERDI's task is to produce and evaluate materials that can withstand the high temperature and corrosive environment produced by the fuel cell operation.

MERDI recently completed a study investigating the conversion of wheat straw into a usable fuel. The study, financed by DNRC, inventories the state's resources, examines current farming practices, and identifies processes that might be used for combustion and storage. The conclusions of the study will be reported to DNRC in late 1980.

Another current activity at MERDI is geothermal research and development. The Montana Warm Springs State Hospital Geothermal Project is now being developed under a contract with DOE. A new well has been drilled, cased, and tested for flow, temperature, and composition. The resource is adequate at least for domestic hot water heating in the Warm Springs complex and may also provide space heating for some of the buildings. The project will be completed in 1981.

MERDI has contracted with MPC to perform site verification and monitoring studies at four potential coal-fired power plant sites in Montana. The studies include air quality/meteorology, biology, water quality and availability, and socioeconomics. (See Section 3.1.2.2.).

9.1.3. CENTER FOR INNOVATION

The Center for Innovation, a division of MERDI, was established in 1977 to promote the development of inventions, including those relating to energy, by assisting in all phases of the development process. DNRC's Renewable Alternative Energy Sources Program provided part of the initial funding for the Center.

Presently the Center is funded by DNRC, the Old West Regional Commission, DOE, and the U.S. Economic Development Administration. It supports inventions by providing patent, technical, business, licensing and marketing assistance with the object of marketing products as quickly as possible. Since its establishment, the Center has received over 1,200 requests for assistance. Various types and levels of assistance are provided, depending on the results of the Center's initial evaluation. In one instance, an inventor of a highly efficient solar collector was linked with a manufacturer/distributor who added the collector to his line. Other energy-related projects include testing an insulation product for mobile homes, a trial marketing plan for a device that reduces fuel consumption by trucks, and expanded manufacturing and marketing plans for a wood burning furnace. The presence of the Center has encouraged inventors to develop their ideas in Montana.

9.2. NATIONAL CENTER FOR APPROPRIATE TECHNOLOGY

The National Center for Appropriate Technology (NCAT) was established in 1976, under a grant from the U.S. Community Services Administration, to research, develop, adapt and transfer to low-income communities a variety of appropriate technologies that address problems of poverty, particularly the problem of increasing energy costs. NCAT, a Montana nonprofit corporation with its headquarters in Butte, began work in the spring of 1977. For fiscal 1980, its total grant funding is $3.85 million for technical research and development, field operations, and small grants.

NCAT's Grants Division funds local community action agencies and other community-based organizations, with the primary goal of demonstrating and transferring previously-developed appropriate technologies. Grants also are given for demonstrating the feasibility of appropriate technologies still under development, and for developing new ideas and technologies with potential benefits for low-income communities.

In its first three years of operaton, NCAT has awarded grants totaling over $2.5 million to 329 projects nationwide. Two Integrated Community Demonstration programs were initiated in 1979 to demonstrate how community-based organizations can draw on multiple resources — local agencies and organizations, municipal government, federal and foundation grants, and others — and combine a number of appropriate technologies to address a range of community problems. A National Impetus Grant Program to build 100 solar greenhouses at demonstration sites nationwide was conducted in the summer of 1980.

As of September 1980, the Center had awarded 12 grants totaling $66,500 for projects in Montana. In 1980 the grants went to: 1) the Blackfeet Tribe for a solar greenhouse attached to Medicine Pine Lodge — a drug and alcohol rehabilitation and training center; 2) Opportunities, Inc. for a solar greenhouse attached to a low-income client's home in Cutbank; and 3) to District IV Human Resource Development Council in Havre for a greenhouse attached to a Head Start school building.

The Center's Field Operations Division helps direct research, grants, information and other activities to better meet the needs of the poor. The 10 regional representatives and their staffs represent NCAT to the public, provide information and technical assistance, and help community action agencies and low-income groups recognize and use appropriate technologies that meet their specific needs. NCAT also maintains an office in Washington, D.C. for liaison with government policy makers and with other national organizations.

NCAT's Information Division publishes and distributes materials, including a national newspaper, the **Appropriate Technology Times**, to thousands of community action agencies, low-income and appropriate technology groups, news media outlets and others. Other informational materials produced by the Center include technical reports; consumer and technical educational materials, handbooks and manuals; bibliographies, resource lists and other reference works; analytical papers and policy statements; and public service announcements, slide shows and exhibits. NCAT's library and resource center maintains a complete and up-to-date collection of reports, books and periodicals covering appropriate technology, and responds to numerous information requests.

The Research and Development Division, with a staff of 36 scientists, engineers and support personnel, is one of the largest applied programs in the country addressing low-income problems. Areas of research concentration include passive and active solar heating, residential conservation, biomass energy systems, community-scale agriculture, building rehabilitation, and related topic areas. The technical staff is divided into three task groups: agriculture and biofuels, renewable energy, and building technology.

The agriculture and biofuels group concentrates on developing less costly, less centralized, more effective and environmentally benign food and energy systems. Specific projects include: improving alcohol fermentation and separation technologies; constructing, testing and demonstrating alcohol stills; developing computer

models for direct agricultural marketing and nutrition-information systems; designing and using greenhouses, cold frames and small-scale farm machinery; improving techniques for drying, storing, and processing foods; and analyzing issues that affect public response to appropriate agricultural technologies.

The work of the building technology group is focused on energy-conserving designs, low-cost and materials-conserving construction techniques, building rehabilitation, and weatherization. Ultimately, the goal is to provide better, more affordable and more energy-efficient housing for low-income people.

The renewable energy task group develops and evaluates various low-cost renewable-energy appliances, particularly retrofit applications to existing housing. Tasks outlined for the third year include: research and development of inexpensive active solar systems; testing community-built solar collectors and solar thermal systems, including passive solar retrofit; developing a computerized performance model that simulates passive solar designs; greenhouse thermal research; and work on hybrid (wind, solar, wood, hydro) power systems.

9.3. ALTERNATIVE ENERGY RESOURCES ORGANIZATION

The Alternative Energy Resources Organization (AERO) is a nonprofit public interest group formed in 1974 and based in Billings, Montana. Its educational office—the New Western Energy Show Office (see following subsection)—is in Helena. AERO has two associated groups: AERO-West in Missoula, and the Pondera Solar Alliance in Conrad.

AERO's purpose is to identify energy technologies and methods that respond to citizen's concerns: local job opportunities and economic development; costs to individuals; environmental effects; and social impacts. AERO promotes renewable energy development using four methods: research; public education — workshops, seminars, tours, conferences, school programs, the traveling New Western Energy Show, and consulting on design and technology, solar law, and state and national policy; outreach — community education and organizing, publications including a monthly magazine, **The AERO Sun-Times**, energy activity books for children, and fact sheets and pamphlets; and citizen representation — AERO sponsored a full-time lobbyist for renewable energy in the 1979 Legislature.

A major focus in 1979 was AERO's Local Energy Organizers Project. This program was initiated in February 1979 as a method of catalyzing citizens' local government efforts in Montana to analyze present energy use, become educated about energy conservation and renewable energy alternatives, and begin the transition from fossil fuels to these alternatives. Funded primarily by CETA, seven energy organizers were hired, one each from the towns of Miles City, Roundup, Billings, Bozeman, Hamilton, Helena and Havre. Several of them initiated or acted as a catalyst for successful activities and programs across the state, including a weekly radio program on renewable energy, classes on renewable energy at local schools and colleges, design and implementation of conservation/retrofits on low-income homes, workshops on solar window boxes and solar greenhouses, and working with local Community Action Programs to finance the building of solar food dryers.

Beginning in September 1980, AERO will conduct a county assessment of Montana's energy options, a one-year program to be undertaken in 10 Montana counties. This program will: assess the county's present energy use, by sector and type of energy; determine the county's energy conservation and renewable energy options, including their economic and employment-related implications; and undertake at least three local action projects aimed at alleviating energy supply and distribution problems in the county. This program is partially funded by VISTA, which will support one trained volunteer per county, plus a full-time supervisor to direct the activities in all 10 counties.

9.3.1. THE NEW WESTERN ENERGY SHOW

The New Western Energy Show was formed by the Alternative Energy Resources Organization in 1976 as a means of spreading information about renewable energy and energy conservation. It is a touring group that combines renewable energy displays, panels, a portable library and a theater troupe that performs original musical theater material on the theme of renewable energy and energy conservation. To date the Show has conducted four school and five summer tours, appearing in over 40 Montana cities and towns, in many schools, and in national parks and youth camps.

The DNRC Alternative Renewable Energy Sources Program provided funds for the Show for its 1976 and 1977 summer tours. An additional grant in 1978 helped to support a renewable energy resource center which allowed the Show to go from a summer to a year-round operation.

In 1979 the New Western Energy Show toured schools at the Crow and Northern Cheyenne Indian reservations in Montana. Its 1979 summer tour went to the Calgary Stampede and to six Wyoming towns; the 1980 tour went through 15 towns and cities in Utah. Many of its renewable energy displays toured county fairs in eastern Montana. That tour was sponsored by Action for Eastern Montana and included several workshops.

Future plans include expanding the size of the Show's resource library, updating its renewable energy hardware and products information and listings, and making these resources more readily available to the public. The group plans to continue working with Montana schools, both as a resource to teachers through workshops and curriculum development, and as a touring group.

9.4. NORTHERN PLAINS RESOURCE COUNCIL

Organized in 1972, the Northern Plains Resource Council is an agriculturally-based citizens' organization concerned about the effects of large-scale energy and mineral industrialization on Montana. The Council believes that large-scale industrialization will jeopardize the health of Montana's agriculture and, therefore, should be closely monitored. The Board of Directors, comprised of farmers and ranchers, determines Council policy.

At the federal level, the Council has worked for the passage of federal strip-mine reclamation legislation. Two provisions in the bill of critical importance to agricultural people in eastern Montana are those requiring the surface owner's written consent before leasing and strip mining of federal coal and protecting fragile alluvial valley floors. The Council also worked for passage of the Clean Air Act Amendments of 1977, and took an active stand on the federal coal leasing program established in 1979 and on the Bureau of Land Management's land use plans for coal areas in eastern Montana. Over the past two years the Council has opposed federal efforts to develop a synfuels industry with federal subsidies and to establish an Energy Mobilization Board empowered to override certain laws to expedite energy projects.

The Council has been active in numerous energy issues at the state level, including the proposed legislation to create a Pacific Northwest regional power authority. Reserving water for future agricultural needs is a high priority. Since 1975 the Council has worked with the various conservation district and irrigation projects in the Yellowstone Basin in their efforts to reserve water. The Council continues to oppose Colstrip Units 3 and 4. A major activity in 1980 was working with landowners with regard to the siting of high-voltage transmission lines. In February 1980, the Council initiated a two-year program, the Montana Rural Electric Project. Its purpose is to provide a way for co-op members to influence the electric cooperatives toward conserving energy and using renewable resources.

At the local level, the Council reviews energy development proposals. A large number of its members belong to one of the Council's 18 local affiliated organizations: Alternative Energy Resources Organization, Boulder Valley Association, Bull Mountain Landowners Association, Clark Fork Basin Protective Association, Dawson Resource Council, Deer Lodge Valley Resource Association, Glendive Community Protective Association, McCone Agricultural Protection Organization, North Boulder Protective Association, Powder River Protective Association, Rosebud Protective Association, Sarpy Protective Association, Stillwater Protective Association, Valley Resource Council, Yellowstone Basin Water Use Association, and Yellowstone Valley Citizens Council. The affiliates are involved in such issues as strip mine reclamation in Montana, transboundary air and water pollution impacts from the Canadian Poplar River power plants, water policy, and alternative ways of meeting Montana's future energy needs.

The Council's activities are based in offices in Billings, Glendive, and Helena. It publishes a monthly newsletter called **The Plains Truth** and, in addition, has printed special papers on strip mining in Montana, reclamation, water, social impacts of rapid growth, and synthetic fuels.

9.5. MONTANA COAL COUNCIL

The Montana Coal Council is a trade association representing producing coal companies, coal reserve holders and businesses associated with the coal industry in Montana. It was formed in 1972 when dissention in oil-exporting countries threatened the U.S. energy supply and it became evident that a switch from oil to coal for electrical generation would be promoted nationwide as a major solution. The Coal Council was established to research and present information on the potential of Montana coal for alleviating the country's dependence on foreign oil.

In recent years, the Coal Council has worked at both the state and federal level on legislation affecting the surface mining of coal. During sessions of the Montana Legislature, the Council's staff researches proposed bills to determine their impact and presents testimony for the industry. In the 1979 session, the Coal Council followed more than 100 pieces of legislation. Contacts are maintained on a year-round basis with legislative interim committees, with state agency personnel who implement the laws through rule making, and with federal lawmakers and regulatory agencies.

In addition, the Coal Council works to inform the public about the merits of and barriers to coal development in Montana. This involves presentations to civic groups, classrooms and other associations, arranging mine tours and preparation of informational literature. The Council has prepared a brochure entitled "Montana Coal 1980," which includes information on coal-related state and federal taxes, royalty payments, mining industry employment and payroll data, the location, quantity and quality of Montana coal, and a list of the major federal and state laws governing the surface mining of Montana coal. The Council also publishes a quarterly newsletter, the **Coal Counsel**. The Council's offices are located in Helena.

9.6. MONTANA PETROLEUM ASSOCIATION

The Montana Petroleum Association, a division of the Rocky Mountain Oil and Gas Association, is a voluntary, nonprofit association whose purpose is to promote the discovery, development, production, transportation, refining, conservation, and marketing of oil and gas. The Association has offices in Helena and in Billings. Its membership includes those who operate service stations, those who explore for, refine, produce and transport oil and gas, and those who furnish services and supplies to the industry.

The Association represents its membership before legislative bodies and government agencies and presents the industry's point of view to the public, the media, and other organizations.

The Association provides industry data, statistics and information not only to members, but to others requesting it. The Association issues a periodic newsletter to its members reporting on oil and gas activities in Montana and also prepares a monthly gasoline sales report.

9.7. UTILITIES

This section discusses innovative programs Montana's utilities are sponsoring in the areas of conservation and alternative energy development. The electric energy generation and natural gas operations of the major utilities are presented in Section 2.

9.7.1. MONTANA POWER COMPANY

Energy Conservation. In September 1979, the Montana Power Company (MPC) initiated a two-pronged energy savings plan for residential customers. The program offers homeowners a thorough home energy audit conducted by the utility without charge. On completion of the audit, specific cost-effective weatherization procedures are outlined for the homeowner. Zero-interest loans up to $1,500 with up to 36 months for repayment are available through the utility to fund the procedures. As of August 1980, MPC reported that it had completed 5,361 of the 5,805 energy audits requested by its customers. It has made 1,268 interest-free loans averaging $805 each, and 325 other persons have announced their intention to apply for loans. A new how-to-do-it weatherization guide was produced for distribution to homeowners as a part of the program.

Commencing in April 1981, MPC will be implementing the new Residential Conservation Service program. This program will audit not only for energy conservation possibilities but also for alternative energy potential for all residential customers. Small commercial and multifamily structure audits will be offered in 1982.

In 1980 MPC conservation specialists participated in special training programs on energy conservation measures for public buildings. In addition, MPC is now advising customers on renewable resources they can use to reduce conventional energy consumption in their homes. The utility is also working with Human Resource Development Councils in the state through the Department of Community Affairs on crisis assistance and retrofitting of homes to increase energy efficiency.

In an attempt to help solve energy-related problems for elderly and low-income people, MPC is sponsoring a task force of citizens from around the state. The task force is an independent body of citizens selected by various groups experiencing problems with energy. Its goal is to recommend legislative action that may be taken to help these groups.

Alternative Energy. A residential alternative energy study has been designed to obtain data concerning residential alternative energy (primarily heating systems) and its impact on MPC. The project monitors electrical demand and consumption to determine periods of supplemental energy needs in two solar-heated homes and one heat-pump-equipped home. In another project, two houses in the Colstrip area have been equipped with electric resistance heating, a complete active solar system, a ceramic heat storage system, and a heat-pump system. This project is designed to obtain peak and energy data on new types of residential heating and their impact on MPC. The company is also studying existing passive solar house designs to determine which architectural models are suitable for Montana. It is also studying the feasibility of using waste heat from thermal generating plants for greenhouses.

In late 1979, a MPC application to the DOE for funding resulted in the award of a 160-foot meterological tower to gather wind data at Livingston. An earlier application for funding of a MOD-II wind generator had been turned down by DOE because of insufficient wind data at the site. MPC subsequently contracted with MERDI to compile the appropriate data, and it is hoped that after the current two-year wind monitoring project has been com-

pleted one or more DOE wind generators of 4-5 megawatt capacity will be sited in the Livingston area.

MPC also provided a 25 kilowatt wind machine at the Livingston site in a joint project with MERDI and DNRC on small-scale wind technology, and will cooperate in the siting of additional small wind machines at Big Timber and near Chinook.

Other Programs. MPC is working with the Electric Power Research Institute and MERDI on the effects of the electric utility system upon the MHD inverter and the output of MHD on the electrical system.

MPC is continuing a program to improve its load forecasting by using econometric modeling techniques. This involves examining the effects of cross-elasticity between the price of electricity and gas, population trends, and conservation. A load research study is designed to provide data on residential, commercial, industrial, and REA customer electrical use during system-wide peak and other time periods.

A program is also underway to train consumer representatives to use new heat-loss design calculations to match furnace size to actual house heat loss.

9.7.2. GREAT FALLS GAS COMPANY

Great Falls Gas Company began offering its customers insulation installation in 1976. The company has insulated about 5 percent of the residences in its service territory in the past three years. The company handles only about one-third of the jobs put out for bid, but the program may have encouraged some 20 percent of total residential customers to reinsulate their homes. Studies before and after insulating show an average savings of about 20 percent of heating demand.

Great Falls Gas Company contracted for an aerial thermographic survey of the homes in its service area. The fly-over was made in March 1978, and the photos derived from the survey show the approximate amount of heat loss from ceilings of buildings in their service area. During the succeeding two years, over 60 percent of the company's customers have been in to see the photo of their home or business, and customer requests for free insulation inspections have doubled.

The company started a consumer roundtable in 1979. This group, consisting of representatives of low- and fixed-income customers, meets once a month to find ways to reduce the impact of energy costs. A major objective is to develop awareness of weatherization and low-interest loan programs available to help these customers reduce energy loss.

To help customers understand their bills, the company is now preparing several weather rate reports for its customer service personnel. These reports help explain increases or decreases in the customer's gas bill by explaining the effects of abnormal weather conditions.

The company has instituted a program to introduce new energy-saving appliances to customers, dealers and builders. Significant savings may be realized by using these energy-efficient gas ranges, clothes dryers, water heaters and heating equipment instead of conventional gas appliances or electric appliances.

Great Falls Gas is monitoring solar projects in the Great Falls Gas service area to determine ongoing system efficiences, maintenance characteristics, customer attitudes toward solar systems and other pertinent information. Having gained solar experience over the next few years, the company will be able to aid customers in this area as solar economics become more favorable. And, to stay abreast of solar industry developments, the company is taking an active role in the American Gas Association's Solar Planning Committee.

9.7.3. MONTANA-DAKOTA UTILITIES

In mid-1980, Montana-Dakota Utilities (MDU) began offering an energy conservation program to all residential customers. The free home energy check-up consists of an inspection by a company-trained representative. MDU performs a benefit-cost analysis of applicable energy-conservation measures and recommends ways to improve energy efficiency and use alternate forms of energy. Besides providing energy audits on request, MDU will loan up to $1,500 without interest to eligible customers to pay for insulation, storm doors and windows and weatherstripping and caulking. Customers have up to three years to repay the loans.

Time-of-day electric rates, available to both residential and commercial customers, continue to be offered by MDU. Consumers using the majority of their electricity in off-peak hours, 10 PM to 10 AM, Monday through Friday and all day Saturday and Sunday, are offered substantial savings in their electricity bills. Customers taking advantage of these off-peak hours are also helping to reduce peak capacity requirements, minimizing future construction of electrical generating facilities.

An energy conservation program conducted by MDU has ent red its seventh year. The program, aimed at cons umer awareness, involves mass media advertising, fiee handout brochures, a 44-page guide to "Common Sense Conservation," and a variety of talks and demonstrations by consumer service representatives.

9.7.4. PACIFIC POWER AND LIGHT COMPANY

Pacific Power and Light Company (PP&L) provides interest-free loans for homeowners in its Montana service area to encourage them to install energy conservation and weatherization devices. PP&L customers who own electrically heated homes built before August 1978 are eligible for the program. PP&L loans have no fixed terms and are paid back when the home is sold or otherwise changes hands. PP&L will perform a free energy analysis for its customers and advise them on improving energy efficiency.

PP&L's energy consultants now use a pocket-sized touch-tone pad and amplifier to analyze home energy and heat losses. This unit is attached to the customer's telephone. By dialing a toll-free number, the energy consultant contacts General Electric's Mark III computer, which provides immediate information as to how many kilowatt hours and dollars can be saved by adding insulation, storm doors, windows, etc. Thus a minimum of time and expense is required for the energy audits.

By March 1980, PP&L had performed 503 of the requested 715 audits and made 241 loans averaging $666 each. Weatherization projects financed by the loans were estimated by the utility to save 1,320,680 kilowatt hours of electricity a year in Montana.

Other energy savings programs offered by PP&L include: conservation incentives for existing homes complying with minimum weatherization standards established by the company; promoting energy-efficient new residential construction; and providing technical energy analysis and electric energy conservation recommendations to commercial and industrial customers.

9.7.5. WASHINGTON WATER POWER COMPANY

Washington Water Power Company owns and operates a 397 megawatt hydroelectric generating facility at Noxon, Montana,on the Clark Fork River. In addition the company owns 10 percent of the Colstrip Units 3 and 4 project. This utility does not market power in Montana.

9.7.6. RURAL ELECTRIC COOPERATIVES

Twenty-five rural electric cooperatives provide service in Montana in the areas shown in Figure IX-A. Table IX-1 indicates the office location, power supplier and amount of power sold by each cooperative in 1978.

As noted in Table IX-1, all of the cooperatives obtain their power from one or more larger utilities or organizations, including Bonneville Power Administration, Western Area Power Administration, Montana Power Company, Upper Missouri Electric Generation and Transmission Cooperative, and Central Montana Electric Generation and Transmission Cooperative. Cooperatives that receive power from Upper Missouri and Central Montana G and T, respectively, are members of these power supply cooperatives. Sixteen of the cooperatives, as noted in the table are also members of Basin Electric Power Cooperative, headquartered in Bismarck, North Dakota. Twenty-two are members of Montana Associated Utilities, Inc. (MAU), the statewide organization headquartered in Great Falls.

At its annual meeting in 1979, MAU resolved to promote electric energy conservation by: coordinating a statewide energy conservation program; conducting public information programs on conservation and cooperating with customers who install alternative energy devices; encouraging legislative enactment of statewide minimum building code standards; ceasing to misuse energy or use it inefficiently; encouraging use of energy-efficient devices; and training personnel to perform energy audits.

TABLE IX-1
MONTANA ELECTRIC COOPERATIVES

	Office Location[1]	Power Supplier[2]	Power Resale Sold in 1978 (kWh)
Northeast District			
Big Flat Electric Cooperative[3]	Malta	Cent. MT	16,657,967
Northern Electric Cooperative[3]	Opheim	Cent. MT	30,587,767
Sheridan Electric Cooperative[3]	Medicine Lake	Upper MO	55,500,000
Valley Electric Cooperative[3]	Glasgow	Cent. MT	16,091,409
Lower Yellowstone REA[3]	Sidney	Upper MO	41,920,000
McCone Electric Cooperative	Circle	Upper MO, Cent. MT	62,387,000
Northwest District			
Northern Lights, Inc.	Sandpoint, Idaho	BPA	159,332,857
Lincoln Electric Cooperative	Eureka	BPA	51,605,000
Marias River Electric Cooperative[3]	Shelby	Cent. MT	59,600,000
Glacier Electric Cooperative	Cut Bank	Cent. MT, BPA	117,893,226
Sun River Electric Cooperative[3]	Fairfield	Cent. MT	78,000,000
Hill County Electric Cooperative[3]	Havre	Cent. MT	48,790,023
Flathead Electric Cooperative	Kalispell	BPA	97,813,000
Southwest District			
Missoula Electric Cooperative	Missoula	BPA, MPC	109,000,000
Ravalli County Electric Cooperative	Corvallis	BPA	68,720,000
Vigilante Electric Cooperative	Dillon	BPA	88,500,000
Park Electric Cooperative[3]	Livingston	Cent. MT	30,286,890
Beartooth Electric Cooperative[3]	Red Lodge	Cent. MT	31,273,000
Fergus Electric Cooperative[3]	Lewistown	Cent. MT	72,000,000
Southeast District			
Yellowstone Valley Electric Cooperative[3]	Huntley	Cent. MT	92,350,534
Big Horn County Electric Cooperative	Lodge Grass	MPC	32,000,000
Tongue River Electric Cooperative[3]	Ashland	Cent. MT	39,912,523
Southeast Electric Cooperative[3]	Ekalaka	Upper MO	14,227,975
Goldenwest Electric Cooperative[3]	Wibaux	Upper MO	9,884,413
Mid-Yellowstone Electric Cooperative[3]	Hysham	Cent. MT	22,991,000

[1]All offices are located in Montana, unless otherwise noted
[2]Power supplier abbreviations are as follows: Central Montana Electric Generation and Transmission Cooperative (Cent. MT); Upper Missouri Electric Generation and Transmission Cooperative (Upper MO); Montana Power Company (MPC); Bonneville Power Administration (BPA). Cent. MT and Upper MO do not generate any electricity but purchase power from the Western Area Power Administration (WAPA).
[3]Member of Basin Electric Power Cooperative

SOURCE: Montana Associated Utilities

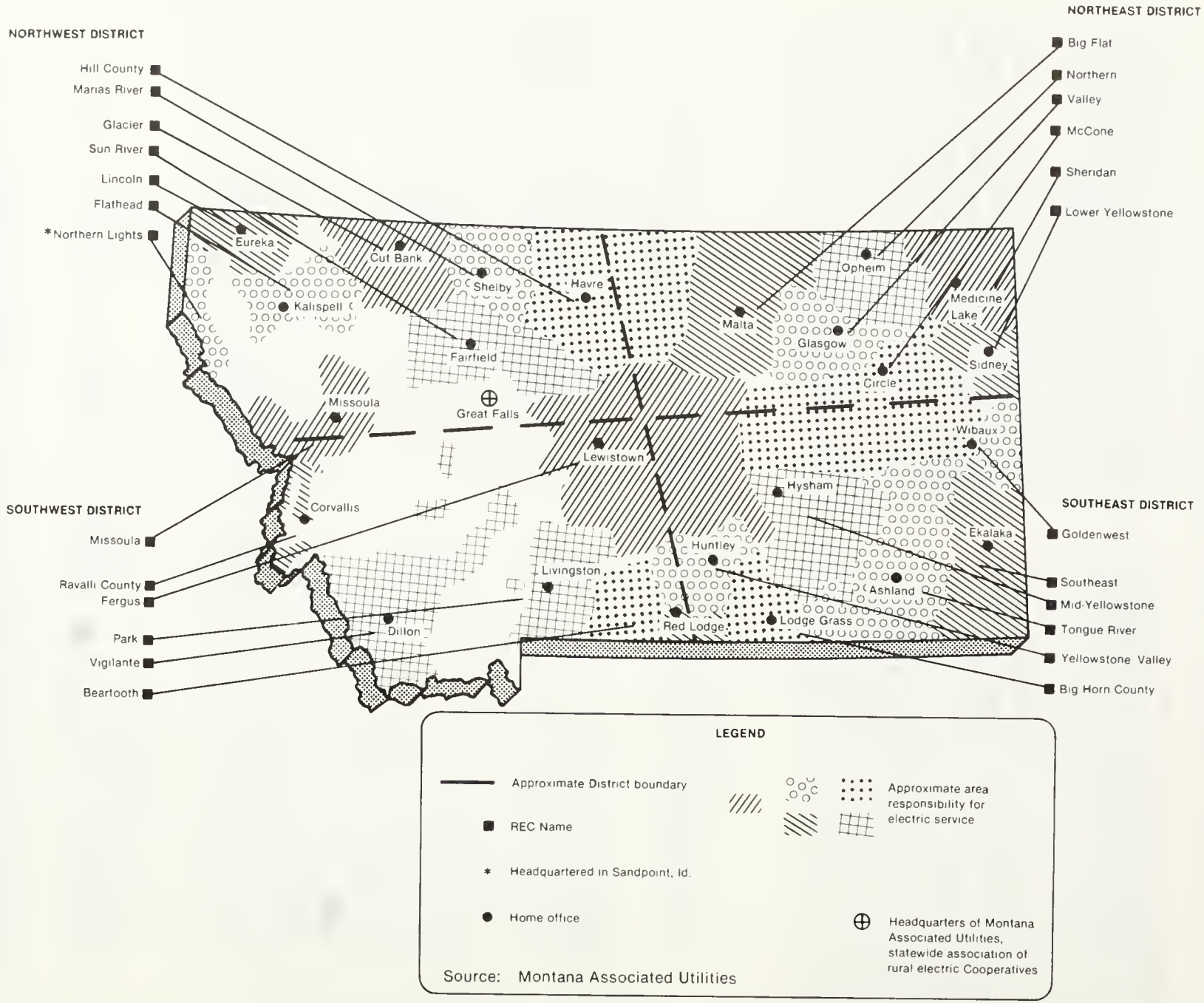


FIGURE IX-A MONTANA'S ELECTRIC COOPERATIVES

(by name, district, home office, approximate coverage area)

9.7.7. UTILITY COORDINATING ORGANIZATIONS

Montana is divided into three electrical regions. As shown in Figure IX-B, the extreme eastern and western areas of the state are separated in terms of federal agency administration, transmission grid system, and federal agency and utility power marketing and pooling agreements. Central Montana is within the western region's power pool and the Federal Energy Regulatory Commission's Region VII, as well as being electrically tied to the west, but it is included in the eastern region's federal power marketing area.

The most meaningful regional division is the geographical distinction between power pools. This division reflects the interconnectedness of the transmission grid system within the region, as well as utility and agency power planning and coordinating efforts. Additionally, the two power pools operating in Montana are based on different power generating sources and, therefore, are not equally vulnerable to generation-related supply problems. The Northwest Power Pool is primarily a hydropower system, while the Mid-Continent Area Power Pool is predominantly based on thermal generation.

Northwest Power Pool—western and central Montana. The Northwest Power Pool, a voluntary organization of utilities and federal agencies in the Pacific Northwest, provides immediate emergency back-up generation for utilities in the pool, including western and central Montana, for a short time (up to one hour). Through its analysis and monitoring of power loads and resources in the region, the pool acts as a coordinating agency and thereby facilitates voluntary power exchanges between utilities in the pool.

In addition to the generating and transmitting facilities owned and operated by the public and private utilities, several federal agencies have a role in the Northwest Power Pool. The Water and Power Resources Service and the Corps of Engineers build, maintain and operate water development projects for the purposes of electricity generation, flood control, water storage, and navigation. Two federal agencies, the Bonneville Power Administration (BPA) west of the Continental Divide, and the Western Area Power Administration (WAPA) east of the Divide, build and maintain transmission lines and substations from these federal generating facilities and market this electricity to public utilities, investor-owned utilities, rural electric co-ops, and large industrial facilities (see Sections 7.1.3. and 7.1.4.).

The transmission systems operated by BPA and WAPA are connected with those built and maintained by the utilities. The entire transmission grid provides the capacity and wheeling capability to operate the power pool and carry out the load transfer agreements between utilities.

The Western Systems Coordination Council provides planning, analysis and load coordination between other utilities and power pools in the western United States and Canada. Covering most of the 11 western states and British Columbia, the Council is a member of the National Electric Reliability Council.

Since utilities and federal power agencies have agreed to operate the hydroelectric generating resources of the Columbia River Basin as a single system, the Northwest Power Pool is a more integrated electrical system than other regional power pools. The Pacific Northwest Coordination Agreement, a formal contract between utilities and federal agencies, established a system of load sharing to maximize the hydroelectric generating capability of facilities in the Columbia River Basin.

Mid-Continent Area Power Pool—eastern Montana. This power pool provides the same type of immediate system coverage for eastern Montana in a short-term operational outage as is provided by the Northwest Power Pool in the western and central areas of the state. Like NWPP, it provides utility planning, analysis, and load coordination for voluntary interutility power transfers, but it is a thermal-based generation system with no regional utility load-sharing agreements or integrated system management as in the Northwest Power Pool's hydropower system. The Mid-Continent Area Reliability Council is analagous to the Western Systems Coordinating Council.

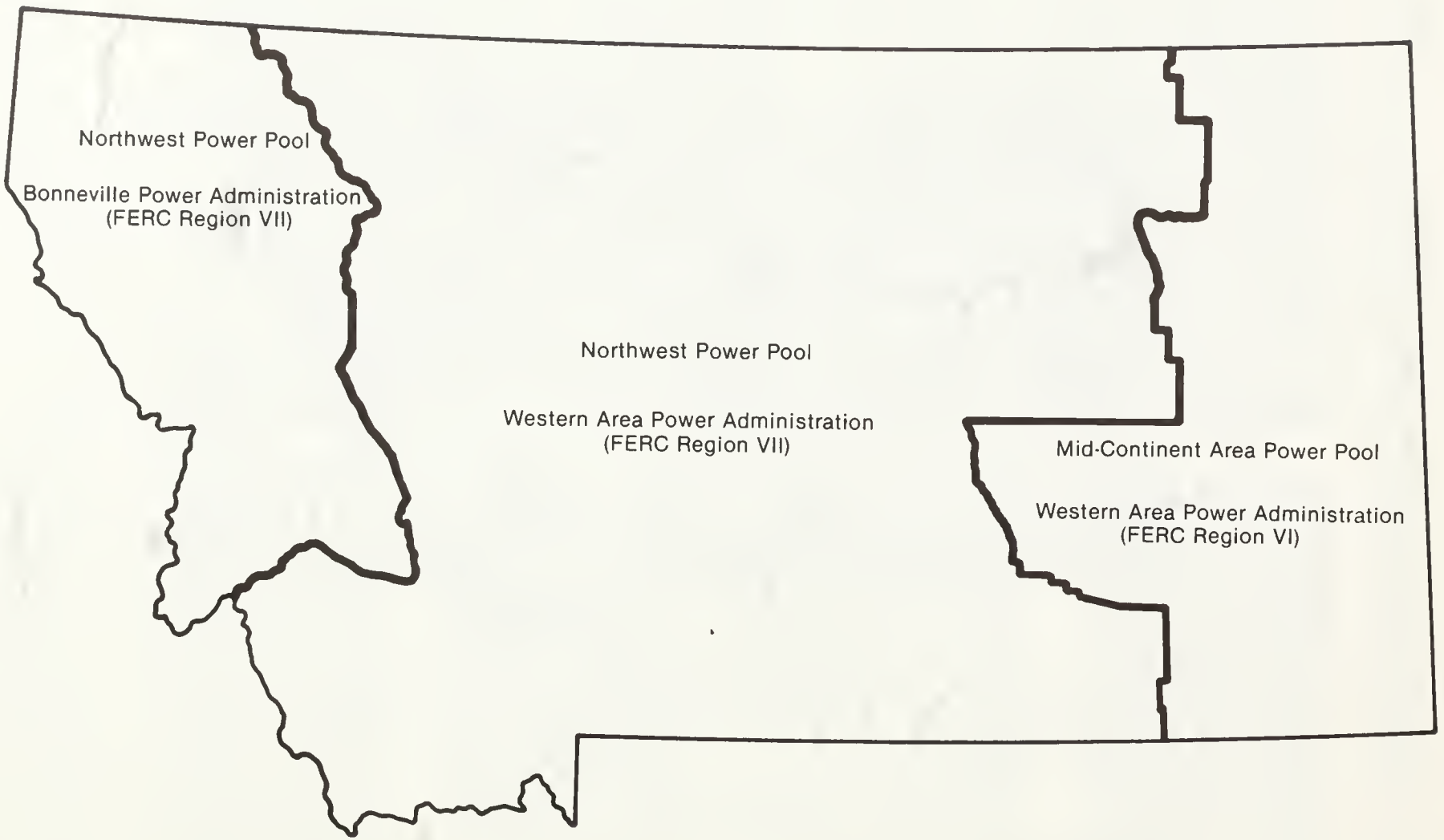


FIGURE IX—B MONTANA'S ELECTRIC REGIONS

9.8. INDIAN TRIBES

Like all residents, Montana's Native American population is affected by the impacts and benefits of energy-related development. But tribal sovereignty over on-reservation activities, the presence of large fossil fuel deposits on a number of reservations, and the geographic proximity of several reservations to specific energy development plans have placed the tribes in a unique and centrally important position. The following is a partial listing of current energy-related activities and energy development plans that involve Montana's Indian tribes.

Northern Cheyenne. In September 1980, the Northern Cheyenne and Atlantic Richfield Corporation (ARCO) signed a $7.3 million agreement on oil and natural gas exploration development and production. The Bureau of Indian Affairs (BIA) prepared an Environmental Assessment on the development (see Section 7.2.1.). The Tribe, in conjunction with conditions to the certificate for Colstrip 3 and 4, has reached an agreement with Montana Power Company (MPC) that allows for preferential hiring of Indians from the reservation for Colstrip 3 and 4, as well as training programs and impact assistance funds for the reservation. Joint support for air monitoring is being provided by the Environmental Protection Agency (EPA) and MPC (see Section 10.1). The Northern Cheyenne Tribe sought and received approval from EPA to redesignate its reservation to Class I air quality status in 1977. The Tribe has requested that all coal leases on the reservation be cancelled, and legislation to this effect was passed by Congress in October 1980. The Tribe has requested that the companies with cancelled leases be given preference on any federal leases granted in the future.

Crow Tribe. On May 18, 1980, the Crow Tribe and Shell Oil Company approved an agreement for leasing and mining coal on the Crow Reservation (see Section 7.2.1.). The Tribe, Pacific Coal Gasification, and Fluor Engineers and Construction, Inc., have been given a $2.7 million DOE grant to study the feasibility of constructing a synthetic fuels plant on the reservation (see Section 3.1.3.5.). The Tribe has also received $750,000 from DOE to study the feasibility of building a 350-400 megawatt coal-fired electric generator on the reservation (see Section 3.1.2.3.).

Confederated Salish and Kootenai Tribes. The Confederated Salish and Kootenai Tribes (Flathead Reservation) are presently studying the implications of redesignating the reservation to Class I Air Quality. Public hearings on the study were scheduled for late October with an application for Class I designation following. The Tribes have received EPA and BIA grants totalling approximately $65,000 for an ongoing study to monitor air pollution on the reservation and to study the Tribe's legal authority to control pollution within the reservation.

The reservation has been included in proposals for routes for both the Northern Tier Pipeline and the Bonneville Power Administration's (BPA) Townsend-Hot Springs and Hot Springs-Bell 500 kV transmission lines which would carry power from Colstrip Units 3 and 4 to the Pacific Northwest. The Tribal Council has requested an environmental study of the Northern Tier route by Stearns and Rogers Engineers, Inc. of Denver, the cost of which will be reimbursed by Northern Tier. The final report should be completed in December 1980. Although $10 million was offered to the Council in March 1980, a decision on granting right-of-way will not be made prior to the environmental report. The $10 million would be spread over 20 years and does not include negotiations on fee land or allotted trust lands.

The preferred route for the BPA lines has not been decided, and alternatives will be studied in a Draft EIS anticipated to be released in late 1980 (see Section 3.3.3.1.). Public hearings will be held in 1981 and a route selected. Negotiations between the Tribal Council and BPA have not yet begun.

MPC now operates the Kerr Dam, located on the reservation. In 1980 MPC's license to operate the dam expired, and the company is presently operating the facility on a yearly license renewal. The Tribes have applied to the Federal Energy Regulatory Commission (FERC) to operate the dam, but no action has been taken on the competing applications. MPC is also considering expansion at the Kerr site, as well as at Buffalo Rapids 2 and 4 (see Section 3.2.2.6.). The utility and the Tribes have been unable to reach agreement on management and ownership of the facilities and planning has been halted since 1975 as a result.

In July 1979, the Tribal Council issued a resolution opposing the Kootenai Falls Dam on the basis of religious freedom. This resolution was included in the FERC Draft Environmental Impact Statement on the Kootenai River Hydroelectric Project issued in May 1980.

Assiniboine and Sioux Tribes of the Fort Peck Reservation. The Fort Peck Tribes have conducted air and water quality monitoring on the reservation as a result of EPA and Tribal grants. An application for redesignation to a Class I air quality status may result from the studies, but at present these studies are being used to develop tribal codes and regulations dealing with pollution control. The Tribes received a DOE grant under which the feasibility of using geothermal energy for space and water heating was studied. The Tribes plan to apply for further DOE geothermal grants to assess the geothermal resource's parameters and to study use of geothermal as an energy source for an ethanol plant. In 1980 bids on leases for 40,670 acres were accepted for oil and gas exploration on the reservation, and exploration on those leases is proceeding.

Negotiations between the Northern Border Pipeline Company and the Tribes have resulted in a right-of-way easement across the reservation. The agreement includes: preferential employment of local residents during construction; restoration of surfaces and contours as far as is practicable and to the reasonable satisfaction of the Tribes; and the provision of a tap on the line on the reservation, the Tribes purchasing gas as needed. The Tribes are also completing engineering studies and a development plan for a small-scale coal strip mine that would produce 12 to 20,000 tons of coal per year and would disturb the surface of 40 acres over 20 years. The coal would be primarily for domestic use with possible future sales to private entities off the reservation.

Fort Belknap Reservation. The Fort Belknap Reservation plans to apply for an EPA grant to study present air quality. If the grant is received, studies will be done to determine the impact of Class I air designation on the reservation and surrounding community.

Blackfeet Tribe. In July 1980, oil and gas leases on 48,000 acres of the Blackfeet Reservation were sold. No Tribal lands were offered for lease at that time; all leases were for allottee-owned lands only. A number of companies obtained the leases, adding to leases already in effect on the reservation.

Six Montana Indian tribes belong to the Council of Energy Resource Tribes, which is described in Section 6.9.

10

ENERGY ISSUES

A STATUS SUMMARY

The purpose of this section is to identify and briefly describe the current status of a few of the major energy issues affecting the state of Montana, including the Colstrip Units 3 and 4 project, the challenges to the coal severance tax and others.

10.1. COLSTRIP UNITS 3 AND 4

Construction began on Colstrip Units 3 and 4 during the fall of 1979 after several years of litigation in both federal and state courts and a major redesign of the plant's air pollution control system.

After the Environmental Protection Agency (EPA) denied a prevention of significant deterioration (PSD) of clean air permit for the project in June 1978, the Montana Power Company (MPC) began investigating more effective pollution control options. As a result, the company proposed to raise the height of the smokestack from 525 feet to 697 feet and to increase the scrubber system's efficiency so that 95 percent of the sulfur dioxide in the stack emissions would be removed. EPA subsequently announced in September 1979 that it would issue the PSD permit. EPA's air dispersion modeling results indicate that the revised system will not violate Class I air quality on the Northern Cheyenne Reservation. Although the Northern Cheyenne and Northern Plains Resource Council (NPRC) disagreed with EPA's analysis, arguing that EPA's model underestimated Colstrip's emissions impacts, the Tribe and the project owners began negotiations that ultimately led to dismissal of several lawsuits related to the PSD issue in April 1980.

In agreeing to drop the lawsuits, the utilities and the Northern Cheyenne Tribe also agreed to a training program and employment for Northern Cheyenne during construction and operation of the units. These negotiations respond to a requirement that the Board of Natural Resources and Conservation imposed on the project's siting certificate. MPC will also provide scholarships to train tribal members as power plant operators and provide impact assistance to the reservation in the areas of community relations, law enforcement and community planning. In addition, an air quality monitoring program will be set up on the reservation.

Colstrip Units 3 and 4 were the subject of several legal actions at the state level during 1979. In April 1979, the Montana Supreme Court upheld a district court ruling that voided the project's certificate of environmental compatibility and public need because procedural errors occurred during the public hearings held before the Board of Natural Resources and Conservation. The Supreme Court ordered the Board to designate a transmission corridor and to determine whether mine-mouth generation as opposed to load-center generation, and using Rosebud coal rather than McKay coal, represent minimum adverse environmental impact. The Board ordered the hearing examiner to review the hearing record and to prepare additional findings of fact to address the Supreme Court's order. The Board adopted the additional findings in June 1979 and the Supreme Court, finding that the Board had complied with its order, overturned the lower court's ruling.

A lawsuit filed by NPRC in Rosebud County challenged the Colstrip construction permit granted by the Board of Health and Environmental Sciences. The suit concerns certain performance requirements relating to control of particulates which, according to NPRC, are inadequate.

A Colstrip 3 and 4 issue which has not resulted in litigation to date, but remains unsettled, is whether the project owners must apply for an amendment to their certificate of environmental compatibility and public need because of the design changes in the pollution control system. DNRC believes that the Siting Act requires the certificate to be amended to reflect any changes in the facility design, and that in the case of Colstrip 3 and 4, this requirement is primarily a procedural matter that will not involve major study. The applicants feel that no amendment is necessary since the certificate directs them to improve the technology and reduce the adverse impacts of the facility wherever feasible. Nevertheless, they may file for the amendment to avoid procedural challenges.

For a description of other recent Board actions with respect to the centerline for the Colstrip transmission line, see Section 5.10.1. Right-of-way acquisition and final tower design for the line bet-

ween Colstrip and Townsend have begun, and construction contracts will be let during 1981. DNRC will monitor construction of the line and reclamation along the right-of-way.

BPA has been authorized by Congress to build the Townsend to Hot Springs portion of the Colstrip transmission line. BPA proposes to build the line along a corridor not approved by the Board, contending that as a federal agency it is not required to comply with the MFSA. In May 1980, DNRC filed an **amicus curiae** brief in support of a lawsuit filed in the state of Washington against BPA, the outcome of which may serve to clarify the extent of jurisdiction of the Siting Act (see Section 7.1.3.3. for a full discussion).

10.2. COAL SEVERANCE TAX CHALLENGE

Considerable controversy has arisen over the constitutionality and fairness of Montana's coal severance tax. In 1978 a number of coal companies and utilities filed a lawsuit challenging the state coal tax, and in 1979 several bills were introduced in Congress to put a 12.5 percent ceiling on state coal severance taxes.

Montana is one of 32 states that levy a severance tax. The present level of Montana's coal severance tax was set by the 1975 Legislature. The law establishes a variable tax rate depending on the heating value (Btu) of the coal and whether it was mined by surface or underground methods. Almost all of Montana coal is surface mined and has a Btu value sufficiently high to be taxed at a rate of 30 percent of the contract sales price at the mine. The Legislature's intention in establishing this tax level was to use the revenue to pay the current and future social and environmental costs of constantly increasing coal development.

In fiscal year 1979, the Montana coal severance tax generated $42 million. The revenue for fiscal year 1980 was $74.3 million and is estimated to be $84.9 million in fiscal year 1981. The increasing collections stem mainly from the increased sales price of the coal. A table showing tax collections on the production of Montana coal from 1971 to 1980 is presented in Section 4.1.5.1. Revenue collected from the severance tax is divided among the state general fund, specific coal impact aid programs, an education trust fund, and a constitutional trust fund for the future. (See Section 4.1.5.1. for the percentage of coal tax revenues allocated to each of these accounts.)

Congressional Challenge. The Congressional challenge to the coal severance tax consists of several bills that would limit the coal severance tax a state could impose to 12.5 percent of the market value of the coal. These bills only apply to coal — not to oil or natural gas — and would affect coal taxation in only three states: Montana at 30 percent, North Dakota at 89 cents per ton, and Wyoming at 17 percent. The sponsors of these bills, Representatives Sharp of Indiana and Devine of Ohio, and Senator Bumpers of Arkansas, contend that coal severance taxes impose an excessive burden on consumers of the power produced from western coal. The bill's supporters also claim that high coal severance taxes obstruct the current national policy to promote the use of coal.

The burden of Montana's coal severance tax on residential customers in specific utility company jurisdictions was calculated by the Montana Department of State Lands in 1980. The results of the study show that the average cost per residential customer for 11 major Montana coal purchasers was $1.79 in 1979, or about 15 cents per month. Montana's severance tax adds 1 percent or less to electricity bills for customers of utilities that use Montana coal.

In June 1980, the governors of 19 states registered their opposition to any federal law setting a ceiling on state severance taxes levied on their nonrenewable natural resources. In stating their opposition to federal legislation of this kind, the governors recognized that it constitutes a threat to their own state severance taxes, levied on such resources as oil and natural gas. In addition, the governors were concerned about the federal government limiting the states' traditional right to tax goods within their jurisdiction.

Hearings were held on the Senate bill in early August 1980. Montana state officials, including the Governor, Lieutenant Governor, and Attorney General, testified in opposition to the federal bill and defended Montana's coal tax. It now appears unlikely that the proposed legislation will emerge from Congress this session, though it is certain to be reintroduced next year.

Court Challenge. The court challenge to Montana's severance tax was initiated by four mining companies operating in Montana (Decker Coal Company, Westmoreland Resources, Inc., Western Energy Company, and Peabody Coal Company) and a number of their utility customers. The suit was filed in Helena's First District Court in June 1978, challenging the constitutionality of the tax. In August 1979, the case was dismissed on the state's motion, holding that the companies, as a matter of law, failed to state a cause of action. In July 1980, the Montana Supreme Court upheld the lower court's action in dismissing the suit. The ruling was hailed as a

landmark decision reaffirming the historic right of states to tax minerals within their borders. The Montana court's decision is presently on appeal to the U.S. Supreme Court.

Since 1978, the four coal companies have paid their coal severance tax under protest. The coal companies had originally requested that the tax revenue be placed in a special fund and retained until the suit was resolved. The Governor, however, in consultation with the Attorney General's office, determined that under current Montana law the protested revenue need not be held in escrow and may be spent in the normal course of state business while the suit is under consideration. The District Court agreed with that conclusion and the companies did not appeal that ruling.

The protest and subsequent suit are based on the following arguments: 1) the tax is not fairly related to the benefits taxpayers derive from the state of Montana and, therefore, it discriminates against and unduly burdens interstate commerce; 2) the tax violates the supremacy clause of the U.S. Constitution in that federal energy and air quality acts and policies have preempted the states of their traditional power to levy severance taxes on low-sulfur coal; and 3) federal law regulating proceeds derived from coal mining pursuant to federal leases preempts the state tax.

This suit is an important test of the state's authority to tax goods and services within its jurisdiction. The state has prepared the following arguments to defend the tax. Since the tax is imposed on each ton of coal produced in Montana (except for the first 20,000 tons of annual production, which is granted to all producers), discrimination does not appear to be a central issue. Also, legal precedent indicates that goods remain a part of the general mass of property in a state until they have been shipped or entered with a common carrier, and, therefore, the tax is not a burden on interstate commerce. The state contends that no court has ever struck down a general excise tax because of its rate. To do so would open all state taxes to the challenge that they are too high.

Concerning the second cause of action, there is no clear federal policy preempting traditional state taxing powers. The policies and legislation cited by the plaintiffs encourage use of coal, but they do not concern state taxation. Further, there is no precedent where a tax has been struck down because it makes implementation of federal policies more costly.

The third cause of action does not appear to have a legal basis, since, according to the federal Mineral Lands Leasing Act of 1920, states retain the authority to tax the output of mines subject to federal leases.

10.3. COAL SLURRY PIPELINES

Coal slurry pipelines are a method of transporting coal mixed with a fluid, usually water. Various proposals have been made to construct a coal slurry pipeline serving the Powder River Basin coal fields of eastern Wyoming and Montana. This construction has been prevented by two important considerations—the right of eminent domain and water appropriations.

Coal slurry pipeline companies do not have the power of eminent domain to condemn property for public convenience and necessity. Without the power of condemnation, coal slurry pipelines could not be constructed because of insurmountable right-of-way problems, particularly with railroads. Legislation has been introduced in Congress on several occasions to grant eminent domain to pipeline companies. These bills failed to gain Congressional approval in 1974 and again in 1978. Two bills considered in the 1979-80 Congress are described in Section 4.2.4.

One reason the legislation has failed to gain passage is that the railroad companies have argued that the pipelines would create inequitable competition and cause them serious harm.

The other major obstacle to coal slurry pipeline construction is that it requires a great deal of water. This is potentially a serious problem in a semi-arid state such as Montana. The situation could be further compounded by water needs for planned power facilities and synfuel plants.

Policy issues associated with coal slurry pipelines include: the effect on water supplies; impacts on the environment; the consequences of such development on the railroads; and the net energy balance relative to the alternatives. Effects on state water-right and facility-siting procedures and policies, direct and indirect, are also important considerations that would have to be taken into account in federal coal slurry legislation. Coal slurry is specifically excluded as a beneficial use of water in Montana.

10.4. EXPORT PREFERENCE POLICY

For the last several years an informal policy in Montana has favored transporting coal out of state rather than converting it within Montana to other forms (e.g., electricity) for use by consumers in other states. Governor Judge, in his energy message to the 1977 Legislature, stated "I believe that Montana should continue to encourage load center conversion of our coal. Conversion within Montana should be for Montana needs."

This informal "export only" policy, however, has never had the force of law. The Legislature has debated the definition of "need" under the Major Facility Siting Act, but no agreement has been reached.

Another facet of the "export" concept involves shipping coal to foreign countries, in particular Japan, South Korea, and Taiwan. For several years this practice was opposed by many Montana citizens and policy spokesmen on the grounds that the impacts of surface mining and coal transportation would be too great. A policy change may be in the offing, however. During 1979,the Western Governor's Policy Office (WESTPO) examined the potential for coal exports, conducted preliminary negotiations with representatives of Japan, Taiwan, and South Korea, and recommended that a "U.S./Japan Joint Venture Group of Research, Development, and Utilization of Western U.S. Steam Coal" be formed.

In 1980, a study by Western Analysis, Inc. on behalf of the Montana International Trade Commission concluded that the mining and export of 600 million tons of Montana coal by the year 2000 would yield significant economic benefits to the state, significantly improve the U.S. balance of trade, and yet involve only one-half of 1 percent of the state's coal reserves. Subsequently, Governor Judge noted that the export of Montana coal to the Pacific rim could provide jobs and severance tax revenues in the state, improve the U.S. balance of trade, and strengthen the free world by reducing Japan's dependence on oil. Therefore, the Governor concluded, coal export should be seriously considered so long as Montana can control the level of its coal severance tax and the reclamation of mined land.

The export of coal, except from state lands, is not now legally prohibited, but Japan is apparently unwilling to commit itself to dependence on Montana coal without assurance that it is politically acceptable. Such assurances would depend on a clear statement of policy from the Legislature and the Governor.

10.5. SYNTHETIC FUELS DEVELOPMENT

The term "synthetic fuels" refers to a variety of gaseous and liquid hydrocarbon products derived from resources such as coal, oil shale or biomass. Coal gasification plants can produce a high Btu natural gas substitute or a lower Btu gas suitable for industrial process heat or space heat. Coal liquefaction plants produce synthetic crude oils that must be refined to yield gasoline and other petroleum products. Biomass conversion facilities produce ethanol. Oil shale must be processed by such methods as retorting to extract the crude from the rock.

During the summer of 1979, synthetic fuels emerged as a major new element in the President's program to limit petroleum imports and increase the domestic supply of petroleum fuel substitutes. In mid-1979 the President proposed to channel $88 million into synthetic fuels development on a scale sufficient to produce 2.5 million barrels per day of petroleum substitutes by 1992.

The President's program was criticized because a synfuels industry will realistically be able to contribute only a relatively small volume of fuel to the nation's energy supply in the next 10 years, and major subsidies may by required for an unknown period if synfuels are to be economically competitive with other fuels. Critics also cited numerous studies indicating that investment in renewable energy technologies and conservation would displace a substantially larger volume of the demand for petroleum over both the short and long term. In addition, because most synfuels technologies are untested in commercial plants, the potential effects on human health and the environment are not understood.

Nevertheless, in 1980 Congressional support for synfuels strengthened commensurate with the increased threat of political disruption in the Middle East and associated curtailment of oil imports. Under the conviction that the U.S. must undertake a dramatic and highly visible program to reduce its oil imports and to demonstrate its commitment to solving its energy supply problems, Congress approved, in June 1980, a comprehensive program to stimulate the production of synfuels. The remainder of this section includes a summary of the new synfuels program provided for in Title I of the Energy Security Act of 1980, and a discussion of the impact the program could have on Montana.

In order to stimulate the development of a synthetic fuels industry, the Energy Security Act provides for the establishment of the Synthetic Fuels Corporation as an independent federal entity. The Act authorizes $20 billion for the Corporation immediately; an additional $68 billion could be authorized in the future. The Corporation will subsidize commercial-scale synthetic fuels projects by assisting private industry in the form of loan guarantees, price guarantees, direct loans, purchase agreements, joint ventures, and direct Corporation ownership in a limited number of cases. The Corporation will use these incentives to help the private sector move rapidly to produce synthetic fuels and achieve a goal of 2 million barrels per day of synthetic fuel production by 1992. The Corporation has an interim goal to produce 500,000 barrels per day by 1987.

The Corporation is authorized to support a broad range of technologies, including: the production of synthetic solids; liquids or gas from coal; oil and gas from shale; oil from tar sands or heavy oil deposits; coal/oil mixtures for direct combustion; electricity through magnetohydrodynamic (MHD) topping cycles; and the production of hydrogen fuel from water.

The Corporation will have a Board of Directors consisting of a Chairman and six members appointed by the President with the advice and consent of the Senate. The Chairman will serve as the chief executive officer of the Corporation. The Energy Security Act also provides for an interim program that will operate until the President certifies that the Corporation is operational.

Two feasibility studies for synthetic fuels development in Montana received DOE funding in mid-1980. The projects are among 110 proposed alternative fuel projects selected for awards totaling approximately $200 million. The Crow Tribe received a grant to study the feasibility of a high Btu coal gasification plant on the Crow Reservation, and Infinity Oil Company, Inc. received a grant to study the

feasibility of an ethanol producing facility in Garfield, Montana.

Although the synthetic fuels legislation passed by Congress in 1980 limits development to pilot facilities for at least four years, the commercial plants that may eventually be constructed could each produce approximately 50,000 barrels per day of liquid product or 250 million cubic feet per day of gas. A 50,000 barrel-per-day liquefaction plant would require approximately 10 million tons of coal per year and consume approximately 3,700-7,500 acre-feet of water per year. A 250 million cubic-feet-per-day gasification facility would consume about 10 million tons per year of coal and approximately 3,250-7,730 acre-feet of water. In comparison, Colstrip Units 3 and 4 will consume about 6 million tons per year of coal and 26,000 acre-feet of water.

In August 1979, newspaper headlines announced that a DOE report entitled "Environmental Analysis of Synthetic Liquid Fuels" had identified 10 counties in eastern Montana as capable, collectively, of accommodating up to 36 commercial scale synfuels plants. Although DOE immediately explained that the report was not a site selection document and was intended only to identify areas with sufficient coal and other resources to accommodate synthetic fuels plants, it is clear that Montana's coal regions are prime areas for synfuels development.

10.6. OIL AND NATURAL GAS DEVELOPMENT IN MONTANA

The last several years have seen a sharp increase in oil and gas development in Montana as the price of those resources continues to rise and petroleum companies explore previously untapped geological formations and "frontier" areas. The rapid rate of this exploration effort has brought social and environmental impacts to some parts of the state and public controversy as to where and how rapidly Montana's hydrocarbon resources should be developed. With 36.4 percent of the state's public and private lands already leased for petroleum development, oil exploration can be expected to play a large role in Montana's energy future.

Eastern Montana. Exploration in the Williston Basin of eastern Montana and western North Dakota has produced major new finds of oil and natural gas in previously undrilled deep geological formations. During the first half of 1980 alone, 126 drilling rigs were operating in the Williston Basin, comprising more than 10 percent of the rigs to be found onshore in all of North America. At least one-third of these rigs were located on the Montana side of the border, and helped account for a production of 16.5 million barrels of oil in 1979 from the area. In all, 55 percent of the total state production of 30 million barrels was produced in the Williston Basin.

State and local governments, planning agencies, and private corporations are attempting to come to grips with the growth petroleum development has created in eastern Montana communities, especially in Sidney and Richland County.

Petroleum development has brought such benefits as more and better paying jobs to the region while broadening and strengthening the local tax base. The social impacts of rapid development include a large influx of out-of-state workers in previously stable small towns, and a scarcity of adequate housing and community services. Eastern Montana is now faced with the problem of reconciling the benefits of added development with the social costs of the boom-town syndrome.

Western Montana. Portions of the western third of the state are part of the geological Overthrust or "Disturbed" Belt, a region where older mountain rocks have been thrust hundreds of miles eastward over the younger strata of the plains. The Overthrust Belt has yielded significant quantities of hydrocarbons in both Alberta and Wyoming, while Montana has remained unexplored until the present.

With the advent of advanced seismic techniques and rigs capable of drilling two to five miles into the earth, interest in Montana's Overthrust Belt has increased dramatically in the last two years. Tens of thousands of acres of private lands in the Flathead, Mission, Blackfoot, Missoula, Bitterroot, Deer Lodge, and Big Hole valleys have been leased.

Federal lands comprise the majority of lands in Montana's Overthrust Belt. The Forest Service's Roadless Area Review and Evaluation Process delayed leasing on much of the federal land in the region until its completion in the spring of 1979. Final lease recommendations will be prepared for nearly 9.5 million acres of Forest Service "non-wilderness" lands by the end of 1980, and the leasing status of lands in the further planning category, comprising 1.3 million acres, will be evaluated during the next two to three years.

Designated wilderness and lands recommended for wilderness comprise approximately 3.7 million acres in Montana, though not all of this land is in the Overthrust Belt. Lease recommendations for these lands will be made by the Chief of the Forest Service by October 1981.

Although most of the federal land in Montana's Overthrust Belt will be open to petroleum leasing during 1980, controversy will remain concerning the development of certain areas. Many of the roadless lands in question offer a variety of natural values that may be seriously affected by development. Such questions as the impact of petroleum development on endangered species, water quality in pristine streams, and the habitat of big game species must be addressed.

If speculation concerning the Overthrust Belt's energy potential is correct, Western Montana may be on the verge of an oil exploration and development "boom" that could have far-reaching consequences for the region.

10.7. MONTANA AND THE 1979 FUEL SUPPLY DISRUPTION

The instability of the international oil market and the consequent vulnerability of petroleum fuels to supply disruption became particularly apparent to Montanans in the spring and summer of 1979. At the time the diesel fuel shortage developed, however, there was little understanding of how a revolution in Iran could produce statewide shutdown of truck stops in Montana six months later.

The situation was particularly confusing because Montana refineries do not process Mideast crude oil. Further, some reports indicated that the loss of Iranian crude oil had been more than compensated by other oil-producing countries, especially Saudi Arabia.

Since world oil production actually increased during this time period over the previous year, and Montana refineries actually processed more fuel in 1979 than in 1978, why did Montanans experience a serious shortage of diesel fuel in late spring 1979? And why were gasoline supplies adequate in Montana when motorists throughout the rest of the country were lining up at the pump to buy gasoline?

Insight into the contradictory nature of this situation can be gained through analysis of the structure and operations of the international and domestic oil market. A brief overview of the events of the past year in the context of the way the petroleum industry functions in Montana follows.

Normally, foreign crude oil is sold on a contractual basis or through concessions to refiners; surplus or noncontracted crude oil is auctioned to the highest bidder on the spot market. When Iran cut back its production of crude oil in late 1978,the companies that had relied on these supplies turned to the spot market. Through competitive bidding for limited supplies, the spot oil price quickly skyrocketed. Rampant speculation and panic buying ensued. Normal supplier-purchaser relationships deteriorated as even contracted supplies of crude oil were diverted to the spot market to take advantage of the inflated price.

Because it takes 60 to 90 days for Mideast crude oil to reach refineries in the U.S., petroleum product shortages didn't begin to develop until the spring of 1979. Although Montana refineries do not process Mideast crude oil, Canada supplies about 45 percent of the crude oil refined in Montana on exchange agreements (see Section 2.2.). This means that the volume of Canadian crude oil supplied to Montana depends on the ability of the state's refiners to obtain an equivalent volume of oil and deliver it to eastern Canada.

With a combined processing capability of 161,250 barrels per day of crude oil and natural gas liquids, Montana is a net exporter of most petroleum products. Only a few companies import fuel into the state for resale. Instead, most of the 23 oil companies marketing petroleum fuel in Montana obtain supplies from the six refineries through exchange agreements whereby fuel is traded between companies in different geographical areas to minimize transportation costs.

Generally, the volume of fuel each company obtains on exchange or has available for distribution in Montana each month is proportional to the volume of fuel the company has available for national distribution relative to the company's national fuel supply obligations. Although a few companies contract each year for specific volumes, most companies base their supply obligations on the volume of fuel their customers purchased in the past.

In a base-period system of fuel allocation, the quantity of fuel a wholesaler (jobber) or retailer purchased from the oil company in the corresponding month of a specified (or chosen) base year is designated as the base-period volume for that month. When an oil company's fuel supply is greater than its base-period obligations, it can sell the surplus fuel on the spot market, make extra fuel available to its base-period customers, or expand the company's marketing area by supplying new customers. When the fuel supply is less than the oil company's base-period obligations, the company can distribute the short supply equitably by allocating to each customer a percentage of the base-period volume. This percentage is called an allocation fraction.

The federal fuel-allocation regulations, which now apply only to gasoline and propane, require an oil company to use a base-period system for allocating fuel. The regulations specify the base-period year and require companies to impose a nationwide allocation fraction regardless of regional variation in fuel availability.

By providing mechanisms for transferring fuel from a closed bulk plant or retail station to others remaining open in an area, the federal controls offer protection for rural areas that depend on just a few distributors for their fuel supplies. Of particular concern to Montanans is that several suppliers are withdrawing from the state as a result of efforts within the petroleum industry to consolidate marketing areas. The regulations require these companies to arrange for their customers to be supplied by another company. Finally, the regulations provide a means for new customers to obtain suppliers and for established customers to obtain increased allocations.

Although problems arise from the rigidity of the federal regulations, and it may take DOE many months to process requests and assign fuel supplies, the controls at least guarantee Montanans an equitable share of gasoline. Distillate fuel oil and aviation gasoline, on the other hand, are not controlled. As a result companies are not required to continue to supply old customers or to meet new or increased fuel needs. If a bulk plant closes, an area may lose some or all of its allocation of diesel fuel and heating oil. And though most companies try to fulfill their established customers' fuel requirements, they are not legally required to do so. When fuel is in short supply, low-volume sales dispersed over a large area like Montana are much less profitable than sales to the highest bidder on the spot market.

The fact that gasoline is subject to allocation controls, while distillate fuel and aviation gasoline are not, partially explains Montana's particular vulnerability to diesel fuel, heating oil and aviation gasoline shortages. But it should be noted that the federal regulations affect provision of gasoline to places where there was demand during the base-period year. If demand patterns shift, a fuel shortage may be compounded by poor geographical distribution of supplies.

Montana's base-period allocation of gasoline increases substantially in the summer due to tourist demand. Because of the uncertainty of gasoline supplies in the spring and summer of 1979, motorists stayed closer to home and out-of-state visitors' travel in Montana was significantly less in 1979 than in previous years. The resultant decrease in gasoline demand left Montanans with adequate supplies of gasoline while motorists in more populated areas lined up at gasoline pumps to compete for short supplies of fuel.

10.8. PACIFIC NORTHWEST REGIONAL POWER PLANNING LEGISLATION

In September 1977, Senator Henry Jackson of Washington introduced the Pacific Northwest Electric Power Supply and Conservation Act (commonly referred to as the "PNUCC bill"). Hearings were held throughout the region, but because of the controversy generated by the bill, which would have given sweeping powers to the Bonneville Power Administration (BPA), no action was taken by the Senate Energy Committee.

In August 1978, Senator Jackson introduced the Pacific Northwest Electric Power Planning and Conservation Act. This bill was based on a set of guiding principles which Senator Jackson believed were consistent with the majority views expressed at the public hearings. Additional hearings were held on the new bill, but Congress adjourned before action was taken.

The bill was reintroduced in April of 1979. After hearings in Washington, D.C., the bill was amended and passed unanimously by the Senate Committee on Energy and Natural Resources. It was further amended and then passed by the Senate in July 1979.

In the meantime, and since, several companion bills were considered by the House of Representatives. In March 1980, the House Committee on Interstate and Foreign Commerce passed a substantially different version, and the House Committee on Interior and Insular Affairs passed an even different version in September.

On September 23, 1980, the House Committee on Rules passed a version of the bill that reconciled the differences between the Interior and Commerce bills. No action was taken by the full House before it recessed in October. When Congress reconvened in mid-November, both the House and Senate passed the House Rules Committee version of the bill and the President signed the bill in early December. Following are the major provisions of the legislation.

Regional planning. The governors of the four Pacific Northwest states (Idaho, Montana, Oregon, and Washington) shall each appoint two members to a regional planning council. This council shall, within two years, prepare and deliver to the BPA administrator a regional power plan, giving first priority to conservation, second priority to renewable resources, third priority to waste heat or resources utilizing high fuel conversion efficiency (such as MHD), and fourth priority to all other resources. The plan shall set forth a general scheme for implementation, taking into account environmental quality, compatibility with the existing regional power system, and fish and wildlife preservation.

Sale of Power. This section of the bill authorizes the BPA administrator to buy power from a utility at the average system cost of that utility. In turn, BPA may sell to an investor-owned utility power at the BPA average system cost for the purpose of supplying the power needs of rural and domestic customers. First priority for the region's federal hydropower remains with the public utilities (rural electric cooperatives, public utility districts, municipal utilities, and federal agencies).

The direct service industries, including Stauffer Chemical of Butte and Anaconda Aluminum of Columbia Falls, may purchase power under long-term contracts.

Resource Acquisition. BPA may enter into a contract guaranteeing to purchase the output of a proposed generating resource, thereby accepting, on behalf of all the region's consumers, the risk of successfully completing the project and providing the project with favorable financing, thus lowering its cost.

Rates. The bill provides that the rates charged to the public agencies for wholesale power would be no greater than they would have been, had the regional bill not passed. The rates charged to investor-owned utilities for power for use by their rural and domestic customers would be comparable.

The difference between sales and purchases of power would be made up by the rates charged to direct service industries.

10.9. ENERGY MOBILIZATION BOARD

A national energy issue of major significance for western states is the proposed Energy Mobilization Board (EMB) that would designate "priority energy projects" and expedite the decision-making process on such projects. A key component of President Carter's "energy independence" program, this proposal is an attempt to reduce the bureaucratic delays that have hindered construction of major new energy projects over the past few years.

Though extremely controversial, EMB legislation had sufficient support to pass both the House of Representatives and the Senate in 1979. But because the two legislative bodies passed separate versions of this fast-track legislation, a conference committee was appointed to reconcile the differences and prepare compromise legislation. Following four months of deadlock over preemption of state's rights and waiver of federal and state laws, the conferees finally agreed on compromise legislation by a narrow margin.

As proposed in the committee's bill, the President would appoint a three-member Energy Mobilization Board to designate priority energy projects. To expedite the permitting processes for these facilities, the Board would be authorized to establish deadlines requiring federal, state, and local agencies to grant or deny permits within a year after an application for the facility is made. To meet the designated deadlines, an agency would be allowed to streamline its decision-making procedures.

The Board may determine that a single federal EIS should be prepared and used by all federal agencies with jurisdiction over the priority energy project. It may also require that the federally-prepared EIS substitute for any comparable state or local requirement provided that the EIS covers all matters that must be covered under the state or local law. The Board may not require that the EIS substitute for the state or local requirements, however, unless the lead agency has been unable to negotiate an agreement for voluntary cooperation with the state or local agency prior to 45 days after establishment of a project decision schedule.

A "grandfather" clause in the legislation permits waiver of any federal, state, or local law enacted after an application for priority status is made,but before commercial operation of the facility. If other legislation impedes completion of a priority energy project, the Board may recommend the complete or partial waiver of any federal law to the President. If the President concurs, Congressional approval may be sought for up to 12 priority projects in any Congressional session.

Judicial review of decisions pertaining to a priority energy project is limited to a temporary emergency court of appeals. All court actions and decisions would have to be made within specified time periods.

House Republicans joined liberal Democrats in rejecting the legislation embodied in the conference committee report. Opponents formed an unusual coalition of those who would resist any fast-track legislation or creation of any additional federal bureaucracy, those with states' rights concerns, and Republicans eager to defeat a program advocated by President Carter.

Though this action has effectively stalled EMB legislation,it is clear that the concept of a fast track for high-priority energy projects will emerge again in the future.

Even if the conference committee drafts legislation that specifically prohibits the Board from waiving state requirements, enactment of a fast-track law is likely to undermine the state's authority to site facilities in an orderly manner. For example, Montana's Major Facility Siting Act (MFSA) provides 33 months from the time an application is accepted until the Board of Natural Resources and Conservation must issue a decision. Within this period the state is allotted up to 22 months to evaluate the application and incorporate public comment into a final EIS. The remaining period provides time for public hearings and a Board decision. Debate on the EMB legislation suggests that decision time allowances for priority projects will be considerably shorter.

The MFSA also requires an applicant to submit baseline data with an application which may include up to four seasons of environmental monitoring and field observations. Energy Mobilization Board legislation is not likely to guarantee affected agencies that they will have the information they need to conduct an adequate evaluation in time for the decision deadlines. Also, since the legislation may take away the state's authority under the Montana Environmental Policy Act to prepare its own EIS, state decisions may have to be based on a federal EIS. In the past, federal EIS's have often failed to incorporate either the methodology or the in-depth impact analysis the state considers necessary to make decisions.

10.10. PUBLIC POWER INITIATIVE

Two attempts to place a constitutional amendment for public power before the Montana electorate have failed to gather the necessary number of signatures. The first occurred in 1976, the second, in 1980. Constitutional Initiative No. 14 would have required the state to purchase and operate all privately owned utility systems, except cooperatives. The state system would be operated by an elected five member energy board. Local governments could establish utility districts, operated by elected directors, to control the distribution of electricity and natural gas. Voter approval would be required for building electrical-generating coal conversion plants, synfuel plants, or electrical transmission lines of a certain size. The amendment would also have required half the net revenue from publicly owned facilities to be used to develop conservation and renewable energy resources.

The proponents of Constitutional Initiative No. 14 argued that there is an unavoidable conflict between the interests of private utility's stockholders and the utility's customers. Public regulation of the utility does not resolve this conflict. Supporters of the public power initiative believe that regulation of the utility by the Public Service Commission has encouraged the utility to construct expensive generating plants and transmission and distribution systems, rather than encouraging investment in conservation and cost-effective renewable energy systems. Opponents of the initiative argued that a public power system would create another level of bureaucracy and decrease the quality of utility service.

Montana law prohibits sale of electricity by any other entity to the ultimate consumer in an area served by a regulated utility. In the past, several legislative attempts to pass a public utility district bill allowing for municipal electric utilities have failed.

10.11. RADIOACTIVE WASTE MATERIAL INITIATIVE

Initiative 84, approved in the November 1980 general election, forbids the disposal of most radioactive waste material in Montana. The initiative does not specifically prohibit the mining of minerals, such as uranium, but it does forbid the disposal of radioactive waste produced by milling or other processing of ore. The initiative amends the existing law covering nuclear wastes control and storage.

Proponents of Initiative 84 claim the initiative will remove the discrimination against out-of-state and large quantity producers of nuclear waste which is embodied in the present law. The initiative will forbid the disposal of any radioactive wastes in Montana, except for some radioactive material used for medical, educational, and scientific purposes already being disposed of here. The initiative specifically covers the waste produced by uranium mills, called tailings. Even after milling, those tailings contain up to 85 percent of the original uranium ore's radioactivity.

Critics of the initiative claim it is effectively a ban on uranium mining. Critics also claim that the initiative will severely curtail the entire mining industry in Montana, since most mining and milling operations produce radioactive tailings. Supporters counter that because the initiative adopts the Code of Federal Regulations definition of radioactive by-product material, it will apply only to the milling and processing of uranium ore. They also claim that though the initiative will make mining uranium less attractive economically, it will not prohibit the ore from being mined and shipped out of state for processing.

The initiative generated extensive interest in Montana and in other states. Montana was one of seven states with nuclear-related issues on the ballot in 1980.

ENERGY-RELATED AGENCIES AND ORGANIZATIONS

STATE AGENCIES

Governor's Office
Room 204, State Capitol
Helena, MT 59620
(406) 449-3111

Lieutenant Governor's Office
Room 207, State Capitol
Helena, MT 59620
(406) 449-3773

Offices of the Legislature

Legislative Council
Room 138, State Capitol
Helena, MT 59620
(406) 449-3064

Consumer Counsel
34 West Sixth Avenue
Helena, MT 59620
(406) 449-2771

Environmental Quality Council
1209 Eighth Avenue
Helena, MT 59620
(406) 449-3742

Montana Department of Administration
Sam W. Mitchell Building
Helena, MT 59620
(406) 449-2032

Montana Department of Agriculture
Agriculture Livestock Building
6th and Roberts
Helena, MT 59620
(406) 449-3144

Montana Department of Community Affairs
1424 Ninth Avenue
Helena, MT 59620
(406) 449-3494

Coal Board
1424 Ninth Avenue
Helena, MT 59620
(406) 449-2400

Community Development Division
1424 Ninth Avenue
Helena, MT 59620
(406) 449-3757

Community Services Division
1424 Ninth Avenue
Helena, MT 59620
(406) 449-3420

Highway Traffic Safety Division
1424 Ninth Avenue
Helena, MT 59620
(406) 449-3412

Montana Department of Fish, Wildlife and Parks
Fish, Wildlife and Parks Building
1420 East Sixth Avenue
Helena, MT 59620
(406) 449-2535

Montana Department of Health and Environmental Sciences
Cogswell Building
Helena, MT 59620
(406) 449-2544

Air Quality Bureau
Cogswell Building
Helena, MT 59620
(406) 449-3454

Occupational Health Bureau
Cogswell Building
Helena, MT 59620
(406) 449-3671

Solid Waste Management Bureau
Cogswell Building
Helena, MT 59620
(406) 449-2821

Water Quality Bureau
Cogswell Building
Helena, MT 59620
(406) 449-2406

Montana Department of Highways
Highway Building
2701 Prospect Avenue
Helena, MT 59620
(406) 449-2482

Conservation and Education Bureau
Highway Building
2701 Prospect Avenue
Helena, MT 59620
(406) 449-5655

Montana Department of Natural Resources and Conservation
32 South Ewing
Helena, MT 59620
(406) 449-3712

Energy Division
32 South Ewing
Helena, MT 59620
(406) 449-3780

Facility Siting Division
32 South Ewing
Helena, MT 59620
(406) 449-4600

Oil and Gas Conservation Division
2535 St. John Avenue
Billings, MT 59102
(406) 656-0040

Water Resources Division
32 South Ewing
Helena, MT 59620
(406) 449-2872

Office of Public Instruction
Room 106, State Capitol
Helena, MT 59620
(406) 449-3654

Public Service Commission
1227 Eleventh Avenue
Helena, MT 59620
(406) 449-3007

Montana Department of Revenue
Room 455, Sam W. Mitchell Building
Helena, MT 59620
(406) 449-2460

Research and Information Division
Sam W. Mitchell Building
Helena, MT 59620
(406) 449-2981

Montana Department of State Lands
1625 Eleventh Avenue
Helena, MT 59620
(406) 449-2074

Northern Powder River Basin EIS Team
Room 508, Power Block
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(406) 449-2711

Montana College of Mineral Science and Technology
West Park
Butte, MT 59701
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Montana Bureau of Mines and Geology
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Butte, MT 59701
(406) 496-4101

Montana State University
Bozeman, MT 59717
(406) 994-0211

University of Montana
Missoula, MT 59812
(406) 243-0211

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U.S Department of Energy
Region VIII
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Belmar Branch
Lakewood, CO 80226
(303) 234-2420

Bonneville Power Administration
Kalispell District Office
P.O. Box 758
Kalispell, MT 59901
(406) 755-6202

Western Area Power Administration
Billings Area Office
P.O. Box EGY
Billings, MT 59101
(406) 657-6532

Bureau of Indian Affairs
Billings Area Office
316 N. 26th Street
Billings, MT 59101
(406) 657-6315

Bureau of Land Management
Montana State Office
222 North 32nd Street
P.O. Box 30157
Billings, MT 59107
(406) 657-6461

Water and Power Resources Service
Upper Missouri Region
316 N. 26th Street
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Billings, MT 59103
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Fish and Wildlife Service
Federal Building, Room 3035
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Billings, MT 59101
(406) 657-6115

Geological Survey
Conservation Division
P.O. Box 2550
Billings, MT 59103
(406) 657-6185

Office of Surface Mining,
Reclamation and Enforcement
1020 15th Street, Brooks Towers
Denver, CO 80202
(303) 837-5421

Forest Service
Northern Region I
Federal Building
P.O. Box 7669
Missoula, MT 59807
(406) 329-3011

Army Corps of Engineers
Seattle District
P.O. Box C-3755
Seattle, WA 98124
(206) 764-3750

Army Corps of Engineers
Omaha District
Room 6014
U.S. Post Office and Courthouse
Omaha, NE 68102
(402) 221-3020

Environmental Protection Agency
Region VIII
1860 Lincoln Street
Denver, CO 80295
(303) 837-5914

Montana Office
Federal Office Building
301 South Park, Drawer 10096
Helena, MT 59626
(406) 449-5432

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Suite 2300
Denver, CO 80207
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Western Interstate Energy Board
3333 Quebec Street
Suite 2500
Denver, CO 80207
(303) 837-5851

Western Solar Utilization Network
Pioneer Park Building
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Portland, OR 97205
(503) 221-2437

Old West Regional Commission
228 Hedden-Empire Building
Billings, MT 59101
(406) 657-6665

Western Information Network on Energy
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1465 South Grape
Denver, CO 80222
(303) 756-6115

Missouri River Basin Commission
10050 Regency Circle
Suite 403
Omaha, NE 68114
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Pacific Northwest River Basins Commission
1 Columbia River Road
Vancouver, WA 98660
(206) 696-7551

Mountain Plains Federal Regional Council
Energy Impact Office
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1961 Stout Street
Denver, CO 80294
(303) 837-2741

Council of Energy Resource Tribes
Technical Assistance Center
5660 South Syracuse Circle, Suite 206
Englewood, CO 80111
(303) 779-4760

Pacific Northwest Utilities Conference Committee
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Portland, OR 97204
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and Development Institute
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National Center for Appropriate Technology
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Butte, MT 59701
(406) 494-4572

Alternative Energy Resources Organization
424 Stapleton Building
Billings, MT 59101
(406) 259-1958

New Western Energy Show
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Helena, MT 59601
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Northern Plains Resource Council
419 Stapleton Building
Billings, MT 59101
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Montana Coal Council
2301 Colonial Drive
Helena, MT 59601
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Montana Petroleum Association
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Helena, MT 59601
(406) 442-7582

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Montana Power Company
40 East Broadway
Butte, MT 59701
(406) 723-5421

Great Falls Gas Company
P.O. Box 2229
Great Falls, MT 59403
(406) 761-7100

Montana-Dakota Utilities
400 No. Fourth Street
Bismarck, ND 58501
(701) 224-3000

Billings Office
2603 2nd Avenue
Billings, MT 59101
(406) 755-7461

Pacific Power and Light Company
Kalispell Office
P.O. Box 250
Kalispell, MT 59901
(406) 755-7461

Washington Water Power Company
P.O. Box 3727
Spokane, WA 99220
(509) 489-0500

Montana Light and Power Company
P.O. Box V-X
Libby, MT 59923
(406) 293-4141

Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck, ND 58501
(701) 223-0441

Central Montana Electric Generation
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705 Lincoln Lane
Billings, MT 59101
(406) 248-7936

Upper Missouri Electric Generation
and Transmission Cooperative
P.O. Box 1069
Sidney, MT 59270
(406) 482-4100

Montana Associated Utilities, Inc.
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Great Falls, MT 59403
(406) 454-1521

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Blackfeet Tribal Business Council
Blackfeet Agency
Browning, MT 59417
(406) 338-7511

Crow Tribal Council
Crow Indian Reservation
Crow Agency, MT 59022
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Tribal Council of the Confederated
Salish and Kootenai Tribes
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(406) 745-4242

Fort Belknap Community Council
Fort Belknap Reservation
Fort Belknap Agency
Harlem, MT 59526
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Fort Peck Tribal Executive Board
The Assiniboine and Sioux Tribes
of the Fort Peck Reservation
Fort Peck Agency
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Northern Cheyenne Tribal Council
Northern Cheyenne Agency
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2,500 copies of this public document were published at an estimated cost of $4.446 per copy, for a total cost of $11,115.00 which includes $10,615.00 for printing and $500.00 for distribution.